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SECTOR 7 — CHART INFORMATION

SECTOR 7

CHILE—WATERS EAST OF THE ARCHIPELAGO CHILOE AND THE ARCHIPELAGO DE LOS CHONOS

Plan.—This sector describes the E sides of the Archipelago Chiloe and the Archipelago de los Chonos, with the mainland coast E, and the inner waters between the mainland and each archipelago.

General Remarks

7.1 The Archipelago Chiloe extends from Puerto Montt to Boca del Guafo. It consists of Isla de Chiloe and numerous small islands which lie in Seno Reloncavi, Golfo de Ancud, and Golfo Corcovado. The aspect of the archipelago differs radically from that of the adjacent coast. The islands, of moderate height and densely forested, differ from the continental coast which is very high, with snow-capped mountain peaks and volcanoes. There are numerous inlets and coves affording anchorage and shelter during inclement weather.

The Archipelago de los Chonos is separated from the mainland by Canal de Moraleda. From its N entrance, in the vicinity of Isla Queitao (43°44'S., 73°29'W.), Canal de Moraleda is navigable by ocean-going vessels to the E entrance of Canal Darwin (45°27'S., 73°48'W.), which leads to the Pacific Ocean. Although there are many deep inlets indenting the mainland coast E and S of Canal de Moraleda, none of them lead to ports of importance. There are several anchorages within the archipelago that are used by coastal vessels.

Ice.—There is little evidence of icebergs of Antarctic origin being encountered in the channels and inlets of Patagonia, and most of them are ice free throughout the year. There are, however, a number of glaciers which occupy the valleys at the heads of some of the more landlocked inlets. Most of these do not reach the sea, but some affect certain channels from time to time, and will be identified in the text.

Tides—Currents.—Because of the peculiar formation of the large gulfs, Golfo de Ancud and Golfo Corcovado, and because the tidal wave enters each gulf at about the same time, the rise and fall in this region reaches a greater height than in any other part of Chile, except the E entrance of the Strait of Magellan. In these bodies of water the rise and fall of the tide reaches 7m, causing tidal currents to run with great velocity. In Canal de Chacao the tidal currents attain rates of 5 to 9 knots.

The E tidal current strikes Isla de Chiloe and flows around the S end of the island into Golfo Corcovado, reaching as far N as Golfo de Ancud, in the NE part of which it meets the current which flows through Canal de Chacao. In the central part of these gulfs the current is weak, but it is greater in the vicinity of the coast and between the islands.

Southeast of Punta Piedras, about 1 mile SE of Punta Tres Cruces, at the E end of Canal de Chacao, the tidal current is very weak, and in Bahia Manao, S of Punta Piedras, there is no current at all. The N and S currents meet opposite this bay in the middle of Golfo de Ancud. On the E coast of Isla de Chiloe the tides are very irregular because of the variable influence of the wind.

In Estero de Castro and its vicinity, HW is attained sooner than at other points farther S. For example, it has been observed in Fiordo Huilad, about 32 miles S of Estero de Castro, that the time of HW during a strong NW wind was 45 minutes later than the time of HW at Estero de Castro. The average time of HW in the N part of Archipelago Chiloe is about 1 hour, a figure which decreases about 15 minutes at the S part. The time of HW is very irregular, a difference of one-half hour having been observed between the times of consecutive tides. The point of HW is also quite variable as it frequently occurs that the water reaches its highest point during the outgoing tide.

Caution.—The easy gradient with which the land slopes into the water in Archipelago Chiloe is the cause of producing extensive flats at low water. These flats, in connection with unexpected shoals, makes possible grave errors when fixing the position of the ship by bearings.

The waters described in this sector are incompletely surveyed. In general, the soundings appearing on the charts are of a reconnaissance nature. Mariners proceeding through this area should use the utmost prudence in navigation.

Shoals have been reported to lie up to 5 miles off the coast between Punta Auchemo (43°02'S., 72°52'W.) and Punta Pucihuen (43°19'S., 73°04'W.).

Seno Reloncavi

7.2 Seno Reloncavi (41°40'S., 72°50'W.) opens N of Golfo de Ancud and has its main entrance between Punta Perhue (41°52'S., 73°00'W.) and Punta Trentelhue (41°55'S., 72°53'W.), with Isla Nao lying on the coastal bank extending at least 0.5 mile NW of Punta Trentelhue. Estero Reloncavi (41°43'S., 72°35'W.), indenting the E side of the bay, extends about 30 miles inland. Isla Puluqui, Isla Guar, Isla Maillen, and Isla Tenglo lie in the W side of the bay. Isla Queullin (41°53'S., 72°55'W.), lying in the main entrance of Seno Reloncavi, divides the bay into two passages, Paso Queullin and Paso Nao.

Winds—Weather.—At times, there is considerable atmospheric refraction in the bay and approaches. The air becomes so clear, and the sea so calm, that objects can be seen at great distances. However, a rapidly rising temperature and nimbus clouds forming in the N part of the bay indicate the coming of foul weather.

Tides—Currents.—Under certain circumstances, the winds and currents in Seno Reloncavi produce violent eddies and tide rips, known by the name of "rayas." These tide rips occur in Paso Queullin, off Punta Perhue, and in Paso Nao, and are caused by a S wind and outgoing tide. Tide rips occur over Bajo San Jose with an incoming tide and a N wind. Under the same circumstances, there is a tide rip between Punta Redonda, the E end of Isla Guar, and Farallones Caicura, about 8.8 miles E. These tide rips are particularly dangerous for small craft.

Vessels navigating in Seno Reloncavi should take precautions to avoid being set off course by the tidal currents which set into and out of Estero Reloncavi.

Depths—Limitations.—There are general depths of over 182.9m in Seno Reloncavi. Shoals extending off Isla Guar, and the mud flats off river mouths emptying into the N part of the bay, are best seen on charts. Bajo San Jose and Bajo Pucari, lying between Isla Queullin and Isla Guar, uncover at LWS. Dense smoke from forest fires on Isla de Chiloe and the mainland may impair visibility.

Seno Reloncavi—Southwest Side

7.3 Punta Coronel (41°48'S., 73°29'W.), the W approach point of Seno Reloncavi, is prominent due to its barren, high, yellow cliffs. Between Punta Coronel and Punta Guatral (41°43'S., 73°03'W.), the coast is very irregular and indented by many inlets. Several islands front this coast.

Bahia Pargua (41°47'S., 73°26'W.), indenting the coast between Punta Coronel and Punta Tique, about 3.5 miles E, has a depth of 120m in the entrance, with lesser depths near shore. The shores of the bay are low and sloping, with several rivers emptying into the N and W part. Kelp patches extend about 0.3 mile off the W shore. Tidal currents in the bay run with a velocity of 6 to 9 knots at times, especially during spring tides. The currents change direction very suddenly, causing whirlpools and tide rips which bring great stress on the anchor cable. A pier, about 79m long, used by the ferry between Pargua and Puerto Chacao, is situated about 1 mile NE of Punta Coronel. There is a mooring buoy near the pier. Anchorage can be taken, in a depth of 20.1m, sand and gravel, about 0.2 mile, bearing 110° from the head of the pier. However, the anchorage should be used only in an emergency, or in calm weather and a N wind.

Punta Tique (41°48'S., 73°25'W.), a good radar target, is a high, steep, prominent bluff fronted by a sand and gravel beach for about 0.3 mile. The beach is bare at low water. Shoal water extends 0.5 mile offshore. Raya de Tique is the name given to a line of tide rips, especially heavy during spring tides, which extend from Punta Tique to Punta Lilicura (41°54'S., 73°29'W.).

7.4 Punta Abtao (41°49'S., 73°21'W.), the E entrance point of Rada de Cunco, is low and slopes inland. The point is a good radar target. A drying, rocky reef extends 0.8 mile SSE of Punta Abtao. Isla Abtao, a crescent-shaped island lying 0.5 mile NE of Punta Abtao, is very conspicuous at Punta Barranco (41°48'S., 73°21'W.), its NE end. Monuments stand on Punta Abato and the N end of Isla Abato. The SW end of the island is a low isthmus terminating at Punta Quilque (41°50'S., 73°21'W.), off which foul ground extends 0.5 mile.

Rada de Cunco (41°49'S., 73°22'W.), about 0.5 mile W of Punta Abtao, is a roadstead sheltered from N winds by high cliffs fronted by shoals. Tidal currents are strong, but not considered dangerous. Anchorage can be taken, in depths of 25 to 30m, good holding ground of sand and gravel, about 0.7 mile WSW of Punta Abtao. However, with freshening winds from the S and W, it is recommended that vessels leave the anchorage.

Canal Abtao lies between Isla Abtao and Peninsula Challa-hue to the W. Small vessels with local knowledge can transit

this channel, which has sharp turns and a depth of 18.5m in the fairway. There is a 6m patch in the middle of the N entrance to the channel. The channel shores dry for 183m at LW. A dangerous reef extending SSE from Punta Abtao covers at HW. Tidal currents in Canal Abtao attain a velocity of 1.5 knots.

7.5 Puerto Abtao (41°48'S., 73°22'W.) consists of a widening of Canal Abtao at its N end to a width of 0.5 mile, with depths of 9.1 to 29.3m. Anchorage can be taken, protected from all directions, in depths of 18 to 29m, sand and mud, good holding ground. The confluence of the tidal currents from each end of Canal Abtao may make vessels ride uneasily.

Ensenada Codihue (41°47'S., 73°22'W.), between Peninsula Challahue and the mainland N, is entered N of Punta Barranco. Punta Peuque (41°47'S., 73°23'W.) is a conspicuous point rising vertically on the SW shore of the inlet. There are depths of 8.5 to 64m in the bay. There are no known dangers and anchorage is afforded in suitable depths, sandy bottom, throughout Ensenada Codihue. A settlement is situated at the head of the bay.

Dangers in the entrance of the bay include Isla Lagartija, an island in the center with a steep bluff at its S end. Above and below-water shoals extend at least 0.1 mile NW and 2 miles SE of the island. There are several detached patches, sometimes marked by kelp, which lie SSW of the island. Bajo Abtao, with a depth of 4m, is the outermost danger extending ESE from Punta Quilque. Pasa Lagartija, with a least charted depth of 20.1m, leads between Bajo Abtao and the detached dangers. The passage is not buoyed and should not be used without local knowledge.

Isla Quihua (41°45'S., 73°14'W.) lies in an indentation of the coast. The shore dries about 0.1 mile off Punta Chullehua, the S extremity of the island. Roca San Pedro, 0.7 mile E of the point, lies close offshore and is an excellent landmark. Canal San Antonio and Canal Quihua are shallow channels W and E of the island, respectively. An overhead cable, with a vertical clearance of 20.1m, spans Canal San Antonio. Anchorage can be taken, in about 20.1m at the entrance of Canal San Antonio.

Dangers S of Isla Quihua include Bajos de Lami, Bajo Buta, Bajo Chal, and Bajo Cailin, all above and below-water shoals that are shown on the charts. Paso Lami leads between these dangers, but is little used and not recommended. Bajo Quihua and Bajo Corvio (41°51'S., 73°13'W.) are drying, foul grounds connected by a low neck that does not dry at LW. A light is shown from near the center of Bajo Corvio. Another light is shown from Bajo Quihua. Paso Quihua and Paso Corvio are passages shown on the chart which lead between the above charted dangers. A 11m patch lies about 0.8 mile W of Punta Pinto (41°49'S., 73°10'W.) and is marked by a lighted buoy. The fairway leads S and W of the charted dangers.

7.6 Isla Calbuco (41°47'S., 73°09'W.) is separated from the mainland W by Canal Caicaen, and from the off-lying islands by Canal Calbuco. The island, barren and with few inhabitants, is separated from Isla Quenu (41°50'S., 73°09'W.) by Canal Quenu. A causeway joins the N end of Isla Calbuco with the mainland, thus blocking the channel to through navigation. A submarine cable is laid across the channel about 0.2 mile W of the causeway. An overhead cable, with a vertical clearance of 25m, spans the N end of the channel. Anchorage can be

taken, sheltered from W winds, in Caleta La Vega, a bight located at the NE end.

Good anchorage can be taken by small vessels in Canal Caicaen between Punta Caicaen, the SW end of Isla Calbuco, and the village of San Jose, on the S coast of Isla Quihua. In addition, vessels may take shelter in any part of Canal Caicaen except at its NE end. A current of 2 knots and over sets through Canal Caicaen.

Vessels anchor at Puerto Calbuco, in depths of 20.1 to 40m, about 0.3 to 0.5 mile NE of the town. Small vessels usually anchor 0.3 to 0.4 mile NNE of the town, in 31m. The N point of Isla Calbuco should not be approached within 183m because of fringing rocks.

Calbuco (41°46'S., 73°08'W.) stands on the N end of Isla Calbuco. A small pier, showing a light, is situated at the town. Coastal vessels frequently call here.

Estero Huito is entered between Punta Yahuecha and a point about 0.5 mile farther N. A church and the settlement El Rosario are situated on the NE shore of the estuary, NW of Punta Yahuecha.

Within the entrance to Estero Huito the depths are irregular. About 0.8 mile NW of Punta Yahuecha, there is an 8.8m shoal in mid-channel. At the narrows, 0.2 mile farther WNW, a bank extends from the S shore, leaving a channel only 91m wide and with a depth of 6.1m N of the bank. At the inner end of the narrows a bank extends 0.1 mile SW from the N shore, S of El Rosario.

Vessels can anchor just inside the entrance to Estero Huito, in depths of 25.6 to 31m, sand, in mid-channel. There is also an anchorage about 1.5 miles within the entrance, W of El Rosario, in depths of 12.9 to 36.6m, sand. Great care must be used when passing through the narrows.

The tidal currents have a rate of about 2.5 knots, but at springs reach 4 knots.

An overhead power cable extends across the S approach to Estero Huito, at a height of 17m.

7.7 Punta Metrencue (41°44'S., 73°06'W.) lies about 2.3 miles NE of Punta Yahuecha and shows a light. A settlement lies close S of the point. Good anchorage, in 20.1m, mud, can be obtained about 0.2 mile S of Punta Metrencue.

Estero Rulo lies between Punta Metrencue and a point about 1.5 miles to the ENE. The inlet is shallow, there being only 11m in the entrance and 7.3m inside. The inner part of the estuary dries at low water. A church stands on the E shore of the inlet, near the entrance.

Banco San Agustin extends about 0.7 mile SW from the E entrance point of Estero Rulo. There is 5m on the outer edge of the bank and at low water the bank dries 0.5 mile offshore. It was reported that a concrete obstruction, with a depth of 1.5m, lies about 0.7 mile SW of San Agustin church.

Isla Tautil (41°43'S., 73°04'W.) lies about 0.3 mile SE of the E entrance point of Estero Rulo. Rocas Tautil, awash, lies 0.1 mile E of the NE end of Isla Tautil.

Paso Tautil, between Isla Tautil and Punta San Ramon, the N end of Isla Puluqui, has a navigable width of about 0.2 mile, with a least depth of 7.3m.

Inner Channel to Puerto Montt

7.8 The inner route from Gulfo de Ancud between the islands to Seno Reloncavi and Puerto Montt is by way of Paso Corvio, Paso Quihua, Paso Quenu, Canal Calbuco, and Paso Tautil. The least depth in the fairway, as shown on the chart, is 7.3m in Paso Tautil.

Paso Corvio (41°45'S., 73°14'W.) is entered between Bajo Corvio Light and the dangers extending WNW from Isla Polmaltahue. By remaining about midway between these two features, a least depth of about 16.4m is obtained.

Paso Quihua leads between Bajo Quihua and Isla Quenu. This passage has a least depth of 10.9m and is free of dangers, except for the reef which extends W from Punto Pinto, the NW point of Isla Quenu.

Pasa Quenu (41°49'S., 73°10'W.) leads between Isla Quenu and Isla Calbuco. This passage is about 0.3 mile wide and has a least charted depth of about 35m in mid-channel.

Canal Calbuco leads to the NE where it joins Paso Tautil. This channel is over 8 miles long and has a mid-channel depth of about 18.3m; however, a shoal depth of 9.1m is charted 2 miles SE of Isla Tautil.

Having passed through Paso Tautil, a vessel can join the main channel to Puerto Montt, when E of Punta Guatral.

Gulfo de Ancud—North Side

7.9 Grupo Tabon lies S of Isla Chidguapi and Isla Quenu. The group consists of islands connected by low ridges which dry at low water. The tidal currents in the area attain a rate of 1 to 2 knots at neaps and 3 to 4 knots at springs. The incoming tidal current sets NE and the outgoing current sets SW.

Isla Lin (41°54'S., 73°05'W.), the E island of Grupo Tabon, is connected with Isla Tabon by a spit of fine sand which covers at HWS. It can be seen for 15 miles and is reported to be a good radar target. Good anchorage, in 14.6 to 20.1m, mud and sand, can be taken about 0.5 mile S of Punta Llayehue, the E extremity of Isla Lin. A 9.1m patch lies nearly 0.8 mile SSW of Punta Llayehue.

Isla Tabon (41°55'S., 73°09'W.) is the largest and highest of the group. The island is nearly 3.5 miles long, E and W, and near the center there is a low part which covers at HW, forming a small inlet which extends from the N to S, with its entrance in Bahia Lin. The S shore of the island is steep and the sea breaks against it at HW. Its greatest elevation is about 60m, near its W end. A sandbank extends nearly 0.5 mile S from this side. A bank of sand and stone extends about 0.5 mile W from Punta Ilto, the W end of Isla Tabon. Most of the bank dries at low water. Roca Lobos, about 0.3 mile S of the E end of the island, dries 5m, but it is covered at HW. A shoal, with a depth of 10.7m, lies about 0.6 mile offshore, 1 mile SE of Punta Ilto. A light is shown about 0.8 mile E of Punta Ilto. A church is situated on the NE side of the island.

Vessels of moderate size and with local knowledge can take anchorage, in 29m, about 0.3 mile ENE of the church on Isla Tabon.

Bahia Ilto lies between the NW side of Isla Tabon and Isla Llanquinhue. It is about 1 mile wide, with depths of 46m in the center and 12.8m from shore in the SE corner of the shore. The bay is not recommended as an anchorage.

Isla Llanquinhue and Isla Polmallehue together measure 2.5 miles, SE and NW. The SE end of Isla Llanquinhue joins with Isla Tabon at LW. A conspicuous church stands on the N side of Isla Polmallehue. A 2.7m patch lies 0.5 mile NE of the church.

7.10 Bajo Culenhue (41°52'S., 73°11'W.) extends about 1.3 miles NW from the center of Isla Polmallehue. Roca Granello is a large rock which lies near the N end of the reef. The rock uncovers shortly after the start of the outgoing tide.

Banco Amnistia (41°58'S., 73°08'W.) lies with its N edge about 2.5 miles S of Isla Tabcn. The bank is of irregular form and about 1.5 miles in extent. The bank has a least depth of 2.4m. A lighted beacon is situated on the NW side of the bank.

Isla Quenu, about 1.5 miles long and 0.8 mile wide, lies about 2 miles N of Isla Polmallehue. A church stands near the S end of the island. Reefs surround the island on all sides. A lighted buoy is moored about 0.5 mile W of the NW point of the island and marks a 11m patch. A church stands near the S end of the island.

There is anchorage for small vessels, in about 10m, about 0.3 mile E of the church. The anchorage is sheltered against W winds.

Isla Chidguapi (41°50'S., 73°06'W.) lies about 1.5 miles E of Isla Quenu. The island is of irregular shape and surrounded by foul ground. A church stands near the E extremity of the island.

Bahia Pilolcura, in the middle of the W side of the island is about 0.5 mile wide at its entrance. The depths in the bay are moderate and the holding ground is good. Being open to W wind and sea, the bay is recommended for anchorage only in good weather.

Canal Chidguapi separates Isla Chidguapi from Isla Puluqui and has a length of 2.5 miles. The channel is about 0.2 mile wide at its narrowest part. It is somewhat crooked with dangers near each shore, but it has sufficient depth at HW for vessels of moderate tonnage.

Roca Layene, awash at LW, lies in the E approach to Canal Chidguapi about 0.4 mile S of the E extremity of Isla Chidguapi. Vessels entering or leaving the channel should always pass E of Roca Layene, being careful to remain a prudent distance off the coast of Isla Puluqui, which is bordered by shallow water and foul bottom.

7.11 Isla Puluqui (41°48'S., 73°03'W.) borders the E side of Canal Chidguapi and Canal Calbuco. It is the largest island in the area, being nearly 8 miles long, with a variable width caused by the numerous inlets on its W side. On the W side the land is sloping and is fronted by shoal water. On the E side the beaches uncover for quite a distance at spring tides.

Punta San Ramon, the N end of the island, is low and round, with shores of sand and stones which descend steeply into the sea. Punta Perhue, the SE extremity of the island, is very low and narrow. There is deep water around the point, but the wind and currents produce eddies known as "rayas." High cliffs rise a short distance in back of the point. The point is reported to be a good radar target.

Estero Puluqui, located on the NW side of the island, is about 183m wide in the entrance and extends about 1 mile NE. About 0.3 mile within the entrance there is a bank of sand and

stones. The inlet is shoal and tortuous, and useful only for small craft.

Estero Chauquiar is the largest and longest inlet on the W coast of Isla Puluqui. It is 3.3 miles in length and has a uniform width of about 0.5 mile. The depths decrease from about 31m in the entrance to 5.5m, about 0.3 mile from the head of the inlet. Vessels of any size can anchor here, but are exposed to NW winds.

Estero Machildad and Estero Chope, located NE and SW, respectively, of Estero Chauquiar, are of little importance to navigation. Vessels may anchor at the entrance to Estero Chope, but the anchorage is exposed to NW winds.

Seno Reloncavi—East Side

7.12 Seno Reloncavi extends about 25 miles N from the NE part of Golfo de Ancud. The main entrance lies between Punta Perhue, on the W side, and Isla Nao (41°55'S., 72°53'W.) on the E side. The entrance is divided into two passages by Isla Queullin.

Paso Queullin (41°52'S., 72°58'W.), the W entrance to Seno Reloncavi, is deep and has a navigable width of about 1.8 miles. The tidal current runs N on the rising tide and attains rates of 1 to 2 knots; on the falling tide the current runs S and attains rates of 3 to 4 knots.

Paso Nao, the E passage entrance, has a navigable width of about 0.5 mile, with depths of from 23.8 to 49.4m. The tidal current attains a rate of 3 knots in the narrowest part of Paso Nao. During the incoming tide, vessels should take care to avoid being set onto Isla Queullin.

Pilotage is compulsory for all foreign vessels navigating in the channels.

Isla Queullin (41°53'S., 72°55'W.) lies with Punta Cola, its SE extremity, about 1.3 miles NW of Punta Trentelhue (41°55'S., 72°53'W.) and Punta Huin, its NW extremity, about 2.5 miles ESE of Punta Perhue. The W side of the island is steep, but the E side is low and broken. Depths of 2.4m extend 0.5 mile E from Punta Martin, the NE extremity of the island. A light is shown from Punta Huin.

Small vessels with local knowledge can anchor, in 18.3 to 29.3m, in Caleta Martin, close S of Punta Martin. The anchorage is exposed to NW and can only be used in good weather. A small church stands on the shore nearly 1 mile W of the anchorage. South of Caleta Martin the shore bank, with less than 1m on it, extends 0.5 mile E from the island.

Isla Nao lies close W of Punta Trentelhue (41°55'S., 72°53'W.) and is connected with the point by a bank that dries at LWS. The island has been reported to be a good radar target. A small anchorage lies N of the bank connecting Isla Nao and Punta Trentelhue. The anchorage is protected against SW winds, but with winds from the N, NW, and S, the entire coast is unapproachable.

7.13 Bajo San Jose (41°50'S., 72°56'W.) lies between 1.5 and 2.3 miles N of Isla Queullin. At LWS, two patches, the largest nearly 0.5 mile long, dry. It is reported that the bank breaks heavily at times, with N, NW, and even S winds. A light is exhibited from a red framework tower with a green band, 15m high.

Estero Curahuene, about 3 miles NE of Punta Trentelhue, is about 0.3 mile wide at the entrance and about 0.5 mile long. A conspicuous white cross stands on a hill about 0.5 mile NE of Estero Curahuene.

Isla Aulen (41°52'S., 72°50'W.) lies close N of Estero Curahuene and is separated from the coast by a narrow channel which dries at LWS. The island is surrounded by shallow water.

Between the N end of Isla Aulen and Punta Pampichuela, about 2 miles to the NE, lies Estero Quildaco and Estero La Poza. A light is shown on the head of a pier on the N side of the entrance of Estero Quildaco.

Punta Pampichuela (41°50'S., 72°48'W.), the most salient point along this shore, lies about 6 miles NE of Punta Trentelhue. It is circular, with shores of round stones which uncover 0.2 mile at LWS. The Rio Chagual discharges NE of the point.

Anchorage can be obtained 0.8 mile WSW of this point, off the entrance to Estero La Poza.

The Rio Contao lies 2.5 miles NE of the Rio Chagual and is about the same in size. At low water the mouth of the river dries. All but small vessels should give this part of the coast a berth of at least 1 mile. A village stands close SW of the river entrance. Small ships can obtain anchorage, in 45.7m, about 1 mile W of the mouth of the river. The Rio Manihueico discharges about 2.3 miles NE of Rio Cantao.

Farallones Caicura (41°43'S., 72°42'W.) consists of two groups of islets and rocks which lie off the entrance to Estero Reloncavi. The largest of the S group is Islita Caicura which has a well-sheltered cove on its N side. East of Islita Caicura there are several islets, and N of it there are two rocks awash. Grupo Piren, the N group, consists of two main islets and some rocks. Large vessels should not attempt to pass between the two groups.

Estero Reloncavi

7.14 Estero Reloncavi is entered between Morro Chico (41°44'S., 72°39'W.) and Morro Hornos, about 2 miles N. From its entrance it extends about 15 miles ENE, then 16 miles N, with a width of from 0.5 to 2 miles.

The shores of the estuary are rocky and rugged, but clear at the foot of the bluffs, with deep water over a sand bottom. The inlet contains several good anchorages. High mountains lie on each side of the estuary and a number of rivers empty into it.

Winds—Weather.—West winds follow the bends of the channel, and, if of any strength, create a heavy sea. Northwest and N winds are not felt beyond Farallones Marimeli, about 9 miles within the entrance. Winds from between the S and W extend as far as the head of the estuary.

Moderate or fresh N or W winds cause strong gusts which follow the bends of the estuary and, when they meet outside, cause the formation of waterspouts dangerous to boats. Strong SW winds, with violent squalls descending from the mountains on the S side, render the entrance impassable.

Morro Chico (41°44'S., 72°40'W.), the S entrance point of Estero Reloncavi, is conspicuous although not very high. It rises in the center of a small peninsula, which appears as a small island that is joined to the coast by a low isthmus. Small

vessels bound for Estero Reloncavi and awaiting good weather take shelter in Caleta Puelche, just S of Morro Chico.

Punta Chaparano lies about 3.5 miles E of Morro Chico and is similar to it. Bahia Martin lies W of the point and Bahia Chaparano lies E of it. These bays are only used by small craft in fair weather. There is a small pier at the head of Bahia Martin, which is shallow. Cerro Chaparano lies 4 miles E of the point.

Farallones Marimeli (41°42'S., 72°26'W.) consist of one large island surrounded by a group of islets and rocks, and is located about 9 miles ENE from the entrance to Estero Reloncavi. A rock, which dries, lies 0.2 mile off the SW point of the island. Farallones Marimeli divides Estero Reloncavi into two channels, one to the N and one to the S. The N channel, though deep, is very narrow and should not be used. The channel to the S is deep and clear.

The Rio Blanco and the Rio Puelo, which are not navigable, discharge through the S shore of the estuary NE of Volcan Yate (41°46'S., 72°23'W.). A concrete ramp for small craft is situated 0.5 mile SSW of the S entrance point of the Rio Puelo. A small village is situated close to the ramp. A light is shown from the village.

7.15 Punta Sotomo (41°39'S., 72°22'W.), the S entrance point of Bahia Sotomo, lies about 14 miles ENE of Morro Chico. Bahia Sotomo is about 0.5 mile wide between Cayo Observatorio, an islet which marks the SE entrance of the bay, and the coast to the N. Two above-water rocks lie about 91m offshore in the N part of the bay. Bahia Sotomo is deep and the bottom irregular, but small vessels can obtain good shelter. Large vessels can anchor, in 49.4m, on a line between Cayo Observatorio and Cayo Toro, about 0.3 mile offshore.

Caleta El Canutillar is a small port on the W side of Estero Reloncavi, about 8.5 miles N of Bahia Sotomo. There is a small settlement there. The port is useful only for small craft.

Bahia Cochamo (41°30'S., 72°16'W.) lies on the E side of Estero Reloncavi opposite Caleta El Canutillar. The bay is about 2 miles wide and recedes about 1 mile to the E. Cochamo is a settlement on the N shore of the bay close E of Punta Relonhue, the N entrance point of the bay. A conspicuous church and a small pier are situated at the settlement. A ramp lies close E of the pier. A light is shown from a small islet located about 0.1 mile W of the head of the pier. Anchorage, in 44m, mud, can be taken about 0.2 mile SW of the church.

Bahia Ralun (41°24'S., 72°19'W.), which forms the head of Estero Reloncavi, is a circular bay that is entered between Punta Limpia, about 4.3 miles N of Punta Relonhue, and a point 0.8 mile to the NE. Several rivers flow into the bay. A conspicuous church stands on the W side of the bay.

Banco Petrohue, which dries 0.9 to 2.7m, fills the N part of Bahia Ralun. It is formed by the silt brought down by the rivers that empty into the bay. A narrow channel gives access to an anchorage in the W part of the bay. The channel is available only to small craft which should remain just over 91m offshore from abreast of Punta Limpia until W of Punta Veriles.

Cayo Nahuelguapi, on which a light is shown, is an above-water rock on the S edge of Banco Petrohue, about 0.1 mile NNW of Punta Veriles. Vessels should not attempt to pass N of the rock.

Anchorage is afforded in Bahia Ralun, in depths of 32.9 to 40.2m, 0.5 mile W of Cayo Nahuelhuapi.

Seno Reloncavi—East Side (continued)

7.16 Morro Hornos (41°42'S., 72°39'W.) is the N entrance point of Esteros Reloncavi. It is visible for over 20 miles in the N part of Seno Reloncavi, forming one of the best landmarks in the region. This remarkable promontory is about 115m high.

From Morro Hornos the coast trends about 3 miles NNW to Punta Chaica, and consists chiefly of steep cliffs with a few beaches. Caleta La Arena, close N of Morro Hornos, is narrow and deep, and affords shelter only for boats. Morro Chaica, close E of Punta Chaica, is high and takes the form of a sugarloaf, which makes it distinctive.

Bahia Lenca (41°38'S., 72°41'W.) recedes about 1 mile to the NE between Punta Chaica and Punta Lenca. The bay is shallow in its E part and of no importance. The Rio Lenca and the Rio Chauta discharge into the bay. A settlement and a church are situated about 0.5 mile NE of Punta Lenca.

Punta Metri lies about 1 mile NNW of Punta Lenca. The point, though low, is prominent. A group of whitish above-water rocks extend up to 0.5 mile W and NW of the point. A 1.8m patch lies about 0.3 mile S of the point.

Roca Verde (41°35'S., 72°44'W.) lies about 1.8 miles NNW of Punta Metri and about 0.2 mile offshore. The rock is green in color and above-water. Roca Negra, nearly 0.8 mile NW of Roca Verde and 0.5 mile offshore, is low and covers at HW. Several shoals, with less than 10m over them, lie about 0.5 mile offshore between these two rocks.

Punta Quillaiepe, about 3.5 miles NW of Punta Metri, is of moderate height and rugged, with numerous rocks in its vicinity. A shoal, with depths of 1.5 to 2.7m, extends up to 0.5 mile S and W from the point. Piedra Blanca, a conspicuous white rock, lies on the shore close S of Punta Quillaiepe. Bahia Quillaiepe is not recommended as half of it dries at LW.

The **Rio Coihuin** (41°30'S., 72°50'W.), the most important river of those that discharge into the N part of Seno Reloncavi, rises in Lago Chapo and is 12 miles long. It is very crooked, but navigable by boats, which at HW can proceed 6 miles upriver. Thereafter, the river becomes rapid and foul. Punta Coles, of moderate height and wooded, forms the E entrance point of the river.

Bancos de Coihuin extend about 0.8 mile S of a line between Punta Pilluco (41°30'S., 72°53'W.) and Punta Quillaiepe. The outer edge of the banks have depths of from 8.2 to 10m at LW, increasing rapidly farther off. Bancos de Coihuin constitute a danger in the approach to Puerto Montt, particularly during overcast weather. Vessels should keep well to the W of the banks during such weather.

Seno Reloncavi—West Side

7.17 Between Punta Guatral and Puerto Montt, about 14 miles N, the coast is irregular and indented by a number of bays. Several islands lie off the coast, of which Isla Guar and Isla Maillen are the largest.

Punta Guatral (41°43'S., 73°03'W.) is low but prominent. The point is clear of fringing dangers, but to the N it is fronted

by a reef that is shelving and rocky, and should not be approached within 0.5 mile.

Isla Guar lies with its W extremity about 1.5 miles E of Punta Guatral. The island is very irregular in outline, rendered so by various inlets which penetrate deep into its shores, dividing the island into three parts which are connected to one another at HW by a narrow isthmus. The shores are rugged and surrounded by a dangerous beach on which lie large blocks of granite. The N, E, and SW sides of the island are somewhat shoal. Numerous houses stand on the island.

Punta Redonda (41°42'S., 72°54'W.), the SE extremity of the island, is low, but backed by cliffs, which serve as good radar targets. The coastal bank dries 0.1 mile offshore; depths of less than 3.6m extend nearly 0.5 mile off the point. A light is shown from the point.

Estero Chipue recedes nearly 2.5 miles NW between Punta Redonda and Punta Blanca, about 1 mile WSW. Depths of 18.3 to 29m are found in the outer part of the inlet; the inner part is shoal. Vessels of moderate size and with local knowledge can find good anchorage in the outer part. The anchorage lies off the NE shore of the inlet, in depths of 20.1 to 21.9m, and is sheltered from NE and NW winds.

Small vessels can anchor, in 20m, sand and mud, with Punta Redonda Light bearing 079°, distant 0.8 mile.

Punta Blanca (41°43'S., 72°55'W.), the W entrance point of Estero Chipue, takes its name from the whitish color of the point. Depths of less than 5.5m extend 0.3 mile S from the point and 0.3 mile from the coast W of the point.

Bajo Pucari lies from 1.2 to 2 miles SSE of Punta Blanca. The bank is over 0.5 mile in diameter. At LWS, an area of about 0.4 mile in diameter dries, the central part showing about 3m above water. With strong winds, the sea breaks over the bank. There is a wide, clear channel between Bajo Pucari and Isla Guar.

A rock, awash at low water, lies about 0.3 mile SW of the central part of Bajo Pucari.

7.18 Estero Chauqui (41°43'S., 72°58'W.) is entered between a point located about 1 mile W of Punta Blanca and Punta Corral Grande, 1.2 miles SW. The outer part of the inlet is deep, with depths of about 60.4m in the entrance, and depths of 21.9m near its head, about 1 mile farther in. The shores of the inlet are shoal and dangerous. The inlet should only be used by small craft.

Punta Corral Grande (41°44'S., 72°58'W.), the SW entrance point of Estero Chauqui and the S extremity of Isla Guar, is craggy and conspicuous. A church stands about 1.5 miles WNW of the point. A conspicuous statue of the Virgin Mary stands on a hill 3 miles NNW of Punta Corral Grande.

Isla Mallina (41°40'S., 73°00'W.) lies with its S side about 0.3 mile N off the NW end of Isla Guar and is joined to the larger island by a bank of sand and gravel which dries at low water. A light is shown from a white, round, concrete tower with red bands, 8m high, situated on the N side of the island.

A 4.8m patch lies about 0.3 mile W of Isla Mallina. A bank, with 4.3m at its outer end, extends about 1 mile NE from the NE end of the island.

Anchorage can be taken in Caleta Alfaro, off the village of Alfaro, on the NW side of Isla Guar. The anchorage is in 20.1m, poor holding ground, a little over 0.5 mile SSW of Isla

Mallina and about 0.3 mile offshore. It is used mainly by small local vessels.

Estero Chohue (41°40'S., 72°59'W.) lies between Isla Mallina and Punta Alta, about 0.5 mile to the E. Roca Blanca, a large white rock, visible a long distance, lies at the foot of the inlet. The depth in the inlet is about 5m.

Paso Guar leads between Isla Guar and the mainland. The passage has a least width of about 1.3 miles and a least charted depth near the center of 29m. Paso Guar is safe and suitable for large ships.

7.19 Isla Huelmo (41°40'S., 73°04'W.) lies 3 miles NNW of Punta Guatral. The island is separated from the mainland by a drying channel. A reef extends about 0.5 mile E from the SE end of the island and terminates in Roca Lobos, which is black and uncovers at half tide. Roca Huelmo, nearly always visible and of a whitish color, lies between Roca Lobos and the island. It resembles a boat under sail.

Bahia Huelmo, between Isla Huelmo and the mainland, is about 1 mile in extent. Anchorage is obtainable in the outer part of the bay, in depths of 13 to 33m; local knowledge required. The shores of the bay are shallow and rocky, particularly on the S side, where rocks extend 0.2 mile offshore. A light is shown from the E extremity of the rocks.

Bahia Ilque (41°38'S., 73°05'W.) is entered between Punta Capacho and Punta Ilque, 1.7 miles NNW. The shores of the bay should not be approached within 0.4 mile. Shoal water borders the shores for a distance of about 183m, especially near the head of the bay. A 7.2m shoal lies in the entrance to Bahia Ilque, 1 mile NNE of Punta Capacho. Anchorage, in 26m, can be taken about 0.5 mile offshore.

Bahia Huenquillahue lies 2 miles N of Bahia Ilque, and recedes about 2 miles to the W. The bay is semicircular, with depths of 86m in the outer part which decrease to 11m, 0.5 mile offshore. The bay is protected against W winds and offers anchorage in moderate depths in its SW part.

Isla Maillen (41°35'S., 73°00'W.) lies close NE of Bahia Huenquillahue. Shoal depths extend 0.5 mile offshore on the N and S sides of the island. Vessels should not approach closer than 0.3 mile of the island without taking soundings. A conspicuous church stands near the S side of the island. The E extremity of the island is reported to be a good radar target.

Isla Capeaguapi lies about 0.3 mile S of Isla Maillen. The islands are separated by a channel which is 0.4 mile wide at high water, but at low water it is impassable even for small vessels. The island is surrounded by shoal ground, particularly on the N and SE sides.

7.20 Paso Maillen (41°34'S., 73°02'W.) lies between Isla Maillen and the mainland. It has a clear navigable width of 0.2 mile and a least depth of 7.9m in mid-channel. Depths of 1.8m extend 0.2 mile offshore on the N side of Punta Panitao (41°34'S., 73°03'W.). Less water than charted was reported in the N and S approaches to the pass and vessels are advised not to use the pass. During spring tides, the currents attain a rate of 2 knots and form strong eddies. Overfalls have been reported to exist here.

Bahia Chincui is entered between Punta Panitao and the SW extremity of Isla Tenglo, 3.2 miles to the NE. The bay is deep

in the center, but shoals extend 0.5 mile offshore. Isleta Chincui, close offshore in the N part of the bay, has a small sheltered anchorage E of it. Isleta Caullaguapi lies close offshore near the middle of the bay and is connected to the shore by a sandbank.

Isla Tenglo (41°30'S., 72°59'W.) is 2.7 miles long and lies at the head of Seno Reloncavi. The island is separated from the mainland by Canal Tenglo. A lighted buoy is moored off the N end of the island. Submerged rocks near the S entrance and eddies in the N part render passage through Canal Tenglo difficult, and should not be attempted without local knowledge. Depths less than charted have been reported off the S and SE coasts of the island. A lighted radio mast stands on the W side of the canal. Six overhead cables, with a clearance of 39.6m, cross the canal. Pilotage is compulsory.

Bahia Puerto Montt lies at the N end of Seno Reloncavi and is entered between the S end of Isla Tenglo and Punta Pilluco, about 4.5 miles to the ENE. Puerto Montt is situated at the head of the bay. Depths of 35 to 77m are found in the center of the bay.

Puerto Montt (41°29'S., 72°58'W.)

[World Port Index No. 14270](#)

7.21 The bay consists of two parts; the W side, formed by Tenglo and Angelmo Bay, and the outer port, Puerto Montt Bay; the depth in the center of the harbor is 20 to 50m. There is accommodation for general cargo and bulk vessels, ro-ro vessels, and tankers. The main cargoes handled are fertilizer, chips, lumber, frozen fish, general cargo, and petroleum. Almost 1,300 vessels visit the port annually.

Winds—Weather.—The port is protected against N winds. Southeast and SW winds cause considerable sea in the port and interrupt small boat traffic.

Tides—Currents.—Spring tides at Puerto Montt rise 6.4m, while neap tides rise 4.7m.

Tidal currents in Canal Tenglo run E-W.

Depths—Limitations.—The total length of the berth front is 385m with depths between 9.5 and 10.5m; both can transfer bulk and general cargo.

There are two petrol terminals; Esso Chile, making fast at multiple buoys for vessels up to 15,000 tons with a draft of 12.2m, and Cope Chile, making fast at multiple buoys for vessels up to 350 tons with a draft of 3.6m.

A ro-ro transshipment berth, 114m long, accommodates vessels with a draft of 5.5m.

The local authorities should be consulted for the latest information on this port complex, as limiting drafts may vary depending on the state of dredging in the channel and off the wharf.

Aspect.—On approach to the port, the most conspicuous landmark is a large white hospital situated about 1 mile NE of the N extremity of Isla Tenglo. Several tanks with obstruction lights are situated about 0.7 mile ESE of the hospital. A number of radio towers stand on hills E of the town. It was reported that a prominent lighted cross stands on Quinta Hoffman at the NE end of Isla Tenglo.

Recommended tracks through Golfo de Ancud and Seno Reloncavi may best be seen on the chart.

The maneuvering area of the port for mooring is restricted to vessels up to 230m length and a 9m draft; vessels must use two tugs.

The SE coast of Isla Tenglo should be given a berth of at least 0.5 mile to avoid the shoal depths and rocks extending from it. Depths of less than 5.5m extend 0.2 mile N and E of Isla Tenglo's NE end, and the area was reported to be shoaling further.

The outer harbor of Puerto Montt has depths of 20.1 to 159m.

Pilotage.—Pilotage for the port is compulsory for berthing alongside and anchoring. Foreign vessels entering from the Pacific board pilots for the outer channels to Puerto Montt at Valparaiso or Ancud. The harbor pilot should be ordered through the vessel's agent at least 24 hours in advance. The pilot boards about 1 mile from the head of the bay and may be contacted by VHF channel 16 and radiotelephone.

Signals.—When the port is closed because of bad weather, signals are shown from a flagstaff on the Ministry of Marine building. The building is situated opposite the N end of Isla Tenglo. The signals consist of a black ball by day and a red light at night.

Anchorage.—Anchorage berths for vessels over 180m in length have been established, in depths of 40 to 58m, over a charted bottom of sand, at the following bearings and distances off the conspicuous hospital; 180°, 0.6 mile distant; and 178°, 1.1 mile distant. During the winter, vessels are advised to moor with both anchors down on a N heading to face the prevailing wind.

Caution.—Generally, berthing is not carried out with cross winds exceeding Force 4.

A number of lights at a resort close E of Punta Penas should not be taken for Puerto Montt when approaching the port.

Golfo de Ancud

7.22 Golfo de Ancud comprises the water area between the NE part of Isla de Chiloe and the mainland to the E. It is bound on the N by Seno Reloncavi and on the S by Golfo Corcovado. Punta Tres Cruces is the NW entrance point of the gulf, and Punta Trentelhue is the NE entrance point. The W coast of the gulf extends as far S as Punta Quiquel. The E coast extends as far S as Punta Tengo. All the islands that lie on or N of a line joining the latter two points are considered as lying in Golfo de Ancud. Fish farms are situated throughout the coastal area and along the islands in the N of the gulf, especially off the E shore of Chiloe and adjacent islands.

The gulf is deep with depths over 180m in the center. Depths between the islands are irregular and there are a number of shoals.

Fogs are frequent and smoke clouds, produced by the clearing of the forests, hamper navigation in these waters. Navigational aids cannot be relied upon because of storms and strong currents in the area.

Tides—Currents.—The currents and rising tide sets N from Golfo Corcovado and E through Canal de Chacao into Golfo de Ancud, and meet in the NE part of the gulf. There is considerable tidal rise along the shores of the gulf, but near the center the rise is less.

Raya de Tique.—The meeting of the tidal streams setting N through Golfo de Ancud and E through Canal de Chacao causes a line of tide rips to form between Punta Lilicura, about 3.5 miles S of Punta Tres Cruces, and Punta Tique, about 6.5 miles to the NE. This line is known as Raya de Tique, and under certain conditions of wind and tidal current, the tide rips form high waves, which are very dangerous to small craft.

Golfo de Ancud—West Side

7.23 Punta Tres Cruces (41°50'S., 73°29'W.) is the W entrance point of Golfo de Ancud and the SE entrance point of Canal de Chacao..

Tide rips and eddies occur in the vicinity of the point. They are especially strong with fresh winds from the S.

Punta Piedras, about 1 mile S of Punta Tres Cruces, is steep. A conspicuous house close N of the point serves as a good landmark.

Bahia Manao (41°52'S., 73°30'W.) recedes about 2.5 miles W between Punta Piedras and Punta Lilicura, about 2.5 miles to the S. Depths of over 92m are found in the center of the bay. A 10m patch lies about 1.5 miles SE of Punta Piedras. The Rio Manao discharges into the head of the bay.

Anchorage is afforded close NW of Punta Lilicura. A second anchorage, in 11 to 18.3m is about 0.4 mile S of Punta Piedras and is used mainly by vessels awaiting favorable conditions in Canal de Chacao. The house on Punta Piedras serves as a good landmark when making this anchorage. Small craft can obtain good anchorage in about 12.8m, close inshore about 0.5 mile E of the mouth of the Rio Manao.

A small village stands about 0.8 mile WSW of Punta Piedras. A settlement, with a church, is situated on the S side of the mouth of the Rio Manao. A group of houses can be seen between the hills 1 mile W of Punta Lilicura.

Punta Chilen (41°54'S., 73°28'W.) is the SE extremity of a peninsula that projects between Bahia Manao and Bahia Hueihue. A foul bank extends about 0.8 mile ESE from the point. Strong eddies and tide rips are formed on this bank by the meeting of the currents from Golfo Corcovado and Canal de Chacao. The commotion of the waters, known as the Raya de Chilen, is seen over this bank, and its effects are felt particularly when the wind and tide are opposite.

Bahia Hueihue recedes a little over 1.5 miles NW between Punta Chilen and Punta Lamecura, about 2.3 miles to the SW. Piedra Lobos lies about 0.1mile offshore, close N of Punta Lamecura. The large rock, whitish in color, makes a good landmark. Islote Cholche is a small peninsula about 1 mile W of Punta Chilen. Puerto Hueihue forms the head of Bahia Hueihue.

The bay is sheltered from all winds except those from the SE. The best anchorage is about 0.3 mile WNW of Islote Cholche, the bottom is sand.

7.24 Bahia Linao (41°57'S., 73°33'W.) is located between Punta Lamecura and the NE extremity of Peninsula Guapilinao, about 1.5 miles to the S. A reef extends about 0.8 mile E from the peninsula. The reef contains several above-water rocks. A light is shown on the peninsula.

Bahia Linao has depths of from 26 to 31m, with good holding ground of sand and mud. Anchorages are situated in

the S and W sides of the bay. A village lies on the slopes of the hills in the SW part of the bay.

From Peninsula Guapilinao, the coast trends SE for about 9 miles to Punta Queniao. This section of the coast consists of beaches backed by wooded hills. During spring tides, the beaches dry over 0.5 mile offshore. If a vessel is obliged to anchor on this coast, it is advisable to keep in a depth of at least 31m. Cerro Quelequehuen, about 2 miles S of Peninsula Guapilinao, is a good landmark.

Roca Pido (42°01'S., 73°29'W.) lies about 0.3 mile offshore and about 4 miles SSE of Peninsula Guapilinao. The rock is dark in color, above-water at all times, and a good landmark.

Lliuco, a small village about 4.8 miles SE of Peninsula Guapilinao, can be recognized at a long distance by the tower of its church. A sandbank, with less than 9.1m over it, extends nearly 2 miles offshore in this vicinity.

7.25 Isla Caucahue (42°09'S., 73°24'W.) lies with Morro Lobos, its N extremity, about 2.3 miles SSE of Punta Queniao. The island is about 4.5 miles long and 4 miles wide at its widest part. The N and E shores are rough and composed of stone and gravel. The S and SW shores are smooth, sloping back to high wooded hills.

Morro Lobos is a steep bluff which serves as a good radar target, and shows a light. Between Morro Lobos and Morro Quinterguen, the SE extremity of Isla Caucahue, the coastal bank, with depths of less than 5.5m, extends up to 0.5 mile offshore. Bajo Quilahuilque, a drying rock lies 1 mile SSE of Morro Lobos.

Punta Teliupta (42°11'S., 73°24'W.), the S extremity of the island, is prominent. A reef extends about 0.4 mile S from the point.

Bajo Caucahue lies nearly 0.8 mile SW of Punta Teliupta. The shoal has a least depth of 1.8m, and is marked by a lighted beacon.

Punta Queler (42°09'S., 73°28'W.) forms the W extremity of Isla Caucahue. Roca Pillihue, with 1.8m over it, lies about 1.5 miles ESE of Punta Queler.

Canal Caucahue is the channel between Isla Caucahue and Isla de Chiloe. The channel is about 10 miles long, with an average width of 1.3 miles. West of Punta Queler the width is reduced to about 0.3 mile, and in these narrows the current attains a rate of 3 knots.

Depths in the channel are great throughout, and there are no dangers except Bajo Caucahue and the reef that extends from Punta Teliupta.

Puerto Huite (42°07'S., 73°27'W.) is situated on the NW side of Canal Caucahue. The port is surrounded by sloping land and provides excellent shelter. Depths of 26m in the center of the port decrease gradually toward the shore. On the E side of the port, about the middle of the length of the sandy peninsula and less than 0.1 mile from the shore, is a rock which should be avoided when anchoring. Small vessels can be beached on the W shore for repairs.

Estero Tubildad, located about 1.8 miles SW of Puerto Huite, affords well-sheltered anchorage, in depths of 21.9 to 29.3m. Vessels should anchor nearer to the E shore, as a shallow bank extends about 183m from the W shore.

7.26 Puerto Quemchi (42°09'S., 73°29'W.) ([World Port Index No. 14250](#)) is a calm and well-sheltered harbor, and lies on the W side of Canal Caucahue, about 1 mile S of Estero Tubildad.

Vessels anchor, in 22 to 27m of water, opposite the township, or if desired, one ship's length from the shore in 11 to 15m of water. Loading is from the few available lighters. The loading rate is about 15 tons per gang, per hour, and a maximum of four gangs are available. Cargo transfer between the lighters and the ships is carried out by the ships own gear.

There is no pilot, but the channel pilot for Magellan will assist; VHF channel 16 and CBM Radio Naval Station of Magellenas on 500 kHz is used.

The tidal rise, nearly 7.6m at springs, is the highest of any other place in Golfo de Ancud.

Islita Aucar lies about 1 mile SSW of Quemchi, and at LW is connected with the coast of Isla de Chiloe. A church stands on the islet and a sawmill with bright lights stands about 0.8 mile NNW of the church.

Punta Chohen (42°12'S., 73°23'W.) forms the S side of the S entrance of Canal Caucahue. The point is topped by a rugged wooded hill. A bank of sand extends 0.3 mile from the point and uncovers over the greater part at LW. The village of Chohen, with a church, stands about 1 mile WSW of the point.

Punta Pirquen lies nearly 1 mile SSE of Punta Chohen. When coming from the S, Morro Pirquen, standing W of the point, can be recognized by a conspicuous ravine which can be seen in that direction.

Punta Colu (42°14'S., 73°22'W.) lies nearly 1.8 miles S of Punta Pirquen. The point is low, rocky, and backed by low cliffs. A village with a church is situated close N of the point. The water is shoal for 0.5 mile offshore. The point is the N entrance point of Estero Colu.

Piedra Lilecura, which dries 3m, lies near the extremity of rocky ledges which extend about 0.4 mile E from Morro Quicavi (42°16'S., 73°21'W.). A lighted beacon marks the E side of the ledges.

7.27 Punta Huechuque (42°17'S., 73°22'W.) is a low bank of sand that extends about 0.8 mile S from Morro Quicavi. It encloses a lagoon which is accessible from seaward and has depths of from 6.1 to 7m at high water.

Rada Quicavi is formed S of Punta Huechuque and affords moderately good holding ground, protected from W winds. The best anchorage is in 50m, with Quicavi church bearing 325° and Punta Escaleras, the N extremity of Isla Mechuque, bearing 091°. At the head, Rada Quicavi is a channel 0.1 mile wide which connects with a lagoon that is formed W of Punta Huechuque. The depths in this lagoon at high water are 6.1 to 7m. Fresh food in limited quantities is obtainable at Aldea de Quicavi, a small settlement, from which timber is exported.

Punta Tenaun (42°20'S., 73°22'W.) is low and wooded up to 0.3 mile inland, at which distance it rises suddenly to join a chain of hills. These hills, from a distance, appear as though they were the point. A light is shown from the point. Reefs extend up to 0.5 E of the point; S of the point lie tide rips.

Rada Tenaun about 0.8 mile W of Punta Tenaun, has depths of 18.3 to 20.1m, sand and mud, about 0.2 mile offshore. The roadstead offers shelter against NW winds, but is recommended only as a temporary anchorage, as winds from the S

make it untenable. A good berth is in 26m, with Tenaun church bearing 350° and Punta Tenaun 104°.

There is also anchorage about 0.2 mile offshore in a small bay about 2.5 miles WNW of Punta Tenaun. Rocks, awash, extend about 0.2 mile off the NW shore of the bay. The bay is sheltered from N winds.

Paso Tenaun (42°21'S., 73°27'W.) borders the coast of Isla de Chiloe between Punta Tenaun and Punta Quiquel. The pass is deep, with the exception of Bajo Linlin, located about 2 miles WSW of Punta Tenaun.

Estero Tocoihue is located about 4 miles W of Punta Tenaun. The inlet is about 183m wide at the entrance and recedes about 0.8 mile to its head. Depths range from 24m at the entrance to 8.2m at its head.

Rada Calen (42°20'S., 73°28'W.) lies about 1 mile SW of Estero Tocoihue. The roadstead has depths of 40 to 56m and is exposed to winds from the SW and ENE. The village of Calen, with a church, lies near the roadstead.

Estero San Juan, with a village and church at its E entrance point, is encumbered by shoals and is of no use to navigation. The inlet lies about 2.5 miles W of Estero Tocoihue.

Rada Quetalco (42°21'S., 73°33'W.) lies 2 miles W of Estero San Juan. The roadstead is open to the S, making it necessary to approach the shore within 0.2 mile to get soundings of less than 40m. It serves only as a refuge from strong NW winds, which are somewhat frequent in this area. A light is shown close S of the church in the village of Quetalco.

Off-lying Islands and Dangers

7.28 A number of islands and dangers lie off the W coast of Gulfo de Ancud, between Punta Chohen and the S part of the gulf. Grupo Chauques lies 2 to 13 miles E of the coast and is separated from the coast by Canal Quicavi. Canal Chauques divides the group into two groups, Islas Chauques Occidentales and Islas Chauques Orientales. There are six islands in the W group and three islands in the E group. Several of the islands join together at low water.

Islas Chauques Occidentales

7.29 Isla Mechuque (42°18'S., 73°17'W.) is the highest and westernmost island of this group. A light is shown from the S side of the island. A reef, with a depth of 1.5m at its outer end, extends about 0.5 mile from the N side of the island.

Isla Anihue, close S of Isla Mechuque, is separated from it by Canal Anihue. Bajo Anihue, with less than 5.5m, extends nearly 0.5 mile S and nearly 1 mile E from Punta Ouchen, the SE end of Isla Anihue. A depth of 12.8m has been reported (1991) in a position approximately 1.5 miles S of the SE end of Isla Anihue.

Canal Anihue (42°19'S., 73°17'W.), having moderate depths and convenient shelter, is useful as a temporary anchorage. Rada Mechuque, about 0.8 mile within the entrance of Canal Anihue, affords anchorage to vessels of moderate size with local knowledge, in 20.1m, with Isla Mechuque Light bearing 325° and the NW corner of Isla Anihue bearing 210°. Small vessels can anchor, in 10m, about 1 mile within the entrance of the W end of the canal. The spring range of the tide in the canal is about 5m.

Isla Cheniao and Isla Taucolon, joined by a narrow isthmus, lie E and N of Isla Mechuque. Canal Cheniao separates Isla Cheniao from Isla Mechuque. Bajo Cheniao, which dries over its E part, extends 2 miles WNW of the W end of Isla Cheniao. Rocas Peligro, awash, lie on the W part of Bajo Cheniao and is marked by a lighted beacon.

Puerto Voigue (42°19'S., 73°13'W.) indents the E side of Isla Taucolon. Anchorage is afforded at the head of the harbor in moderate depths. Puerto Voigue should only be entered by vessels with local knowledge.

Bajo Pulmunmun extends about 2 miles SE from a position about 4.8 miles N of the NW end of Isla Cheniao. The bank consists of a chain of black rocks, some of which dry at LW. The sea breaks on Bajo Pulmunmun with a moderate swell. During fair weather the rocks are not easily seen.

Bajo Chauques (42°15'S., 73°15'W.), about 1.3 miles long, E and W, consists of sand and stone. A rock awash lies on the W side of the bank, about 1.5 miles N of Isla Cheniao.

Canal Quicavi is about 8 miles long between Punta Chohen and Punta Tenaun, with a least width of about 1 mile. It can safely be used by vessels of any size, but a mid-channel course must be maintained. The tidal currents attain a rate of 2 to 3 knots in Canal Quicavi. During N winds, short, choppy seas and strong tide rips are produced.

Islas Chauques Orientales

7.30 Isla Buta Chauques (42°18'S., 73°07'W.) is the E and largest of both groups. A conspicuous church stands about 1.3 miles NE of Punta Conev, the S extremity of the island. Foul ground extends 0.8 mile off Punta Tugnao, the E extremity of the island, which shows a light. A depth of 7.7m lies 1.5 miles SE of Punta Tugnao.

Isla Aulin lies on a shallow bank that extends about 4 miles NW from the NW coast of Isla Buta Chauques.

Anchorage is afforded about 0.5 mile off the SE coast of Isla Buta Chauques, in a depth of 14.6m, gravel. The anchorage is E of Piedra Cochetahue, which lies close offshore about 1 mile ENE of Punta Conev.

Canal Chauques (42°19'S., 73°11'W.) runs between the E and W groups of Grupo Chauques. There are depths of 40 to 212m in the center of the channel. Although sufficiently wide for vessels of any size, it is not recommended because of Bajo Pulmunmun and Bajo Chauques, which lie in the NW entrance, and because of the reefs which extend into the channel from the islands on either side. Vessels which pass through should maintain mid-channel courses, and on no account pass between Bajo Pulmunmun and Bajo Aulin.

Caleta Juan Pedro lies on the W side of Isla Buta Chauques, about 2.5 miles NNW of Punta Conev. The cove affords good anchorage for small vessels, in a depth of 24m, about 183m off the NE or SE shore of the cove. The cove is partially exposed to E winds, and wholly exposed to winds from the W. A useful mark is that of a prominent church in position (42°18'S., 73°08'W.).

Isla Tac (42°23'S., 73°08'W.) lies about 2 miles S of Isla Buta Chauques. Bajo Yahuen extends nearly 0.5 mile from the SE side of the island. Good anchorage, in 14.6m can be taken between Bajo Yahuen and Punta Piche Niche, the NE end of Isla Tac.

The NW end of Isla Tac terminates in Punta Quilque, from which a rocky shoal projects nearly 0.5 mile in a NW direction. South of the point is a small cove which affords anchorage to small craft. A church stands at the head of the cove.

Bajo Dugoab (42°23'S., 73°11'W.) lies from 0.5 to 2.5 miles W of Punta Lobos, the SW extremity of Isla Tac. The bank is covered at high water, but dries and exposes numerous rocks at low water. The channel between the shoal and Punta Lobos is foul, and heavy tide rips are formed by the currents here.

Islands South of Grupo Chauques

7.31 Isla Meulin (42°25'S., 73°19'W.) lies with Punta Raihue, its N extremity, about 3.8 miles SSW of Isla Anihue and about 4 miles SE of Punta Tenaun. The island is about 3.5 miles long and about 2.8 miles wide. The island is very irregular and has a bight on its NW side. Reefs extend about 0.3 mile from the E side of the island and up to 0.8 mile from its W side. Anchorage is afforded between Punta Lalin and Punta Queldao, on the S side of the island.

Bajo Meulin, an off-lying reef, lies with its center about 2.3 miles W of Punta Raihue. The reef is about 1 mile long and about 1.2m deep. Bajo Esmeralda lies about 1.3 miles W of Isla Meulin and has a least depth of 1.8m. Bajo Veintinuno de Mayo, with a least depth of 7.7m, lies about 2 miles WNW of Isla Meulin, and is marked by a lighted buoy.

Isla Quenac (42°28'S., 73°21'W.) lies about 1.5 miles S of Isla Meulin. The channel between these two islands is about 1.3 miles wide and deep. Farallon El Faro, a steep rock, lies close off the NW side of Isla Quenac. The S and W sides of the island are generally clear, but the E side is foul. Bajo Huemul consists of two rocks, awash, which lie about 0.8 mile SE of the SE extremity of Isla Quenac.

There are two principal anchorages off Isla Quenac. One is in the middle of the S shore, in 14.6 to 21.9m, protected from N winds. The second is off the N shore opposite the town of Quenac, but is exposed to N winds. Caleta Punilco, on the E side of the island, offers good anchorage to small vessels, but caution should be used to avoid Bajo Huemul.

Isla Caguache (42°29'S., 73°16'W.) lies E of Isla Quenac and has a high hill near its center on the W side. The hill is visible for a good distance. The island is fringed with foul ground. Isla Teuquelin lies about 0.5 mile NE of Isla Caguache and is surrounded by shoals. Two rocks, which dry, lie about 0.2 mile off its SE extremity. Roca Teuquelin, with less than 1.8m over it, lies nearly 1 mile NW of Isla Teuquelin.

Bajo Tiquia, the W part of which dries, lies from 3 to 4.3 miles E of the S end of Isla Caguache.

Isla Linlin (42°24'S., 73°26'W.) lies 3.5 miles WNW of Isla Meulin. A sandbank extends between Isla Linlin and Isla Llingua, about 0.5 mile to the S. Small vessels can anchor off the village of Linlin on the W side of the island.

Isla Llingua is comparatively low, with a high hill near its W end. Isleta Chequeten lies close off the SE end of Isla Llingua and is connected to the island by a sandy spit which dries. A red and white banded beacon stands on the island. Puerto Conchas, on the S side of Isla Llingua, affords good anchorage to small vessels during N winds.

Golfo de Ancud—East Side

7.32 Punta Trentelhue (41°55'S., 72°53'W.) is low and wooded. The point is connected to Isla Nao by a bank that dries at LWS. A reef, with a rock awash at its outer end, extends about 0.8 mile SE from Punta Huron, about 1.3 miles SE of Punta Trentelhue. Isla Nao was [previously described in paragraph 7.12](#).

Ensenada Rolecha and Ensenada Queten occupy the NW and SE parts, respectively, of a bight between Punta Huron and Punta Chauchil, about 3.3 miles to the SE. The former bay is sheltered from the N and E., and the latter bay is sheltered from the N. Both bays afford good temporary anchorage to vessels with local knowledge. A village, with a conspicuous church, stands at the head of Ensenada Rolecha. A pier, 50m long, which dries at low water, lies at the head of the bay. A factory situated nearly 1 mile NNE of Punta Huron is a good landmark.

Punta Chauchil (41°58'S., 72°49'W.) is located about 1.5 miles SSE of Ensenada Queten. Banco Chauchil extends SW from the point. The bank dries for about 0.5 mile at LW and the sea breaks over the bank with winds from the W. Vessels should stay at least 3.5 miles off the coast between Punta Chauchil and Punta Gualaihue.

Punta Gualaihue lies about 6.5 miles SE of Punta Chauchil. The point is low, but can be identified by the conspicuous pastures backing it. A light is shown from the point. A reef, over which the sea breaks at low water and W winds, extends 0.5 mile W from the point. The reef is joined to the coast by a sandbank, and at HW during calm weather is very dangerous. Bajo Maria, which dries, lies nearly 0.5 mile offshore, about 0.5 mile N of Punta Gualaihue.

7.33 Bajo Santo Domingo (42°01'S., 72°47'W.) lies about 4.3 miles WNW of Punta Gualaihue. The outer part of the bank dries at LWS, and with W winds, the sea breaks heavily over it. The channel between the bank and the coastal reef is about 0.8 mile wide with depths of 25 to 42m. A 9.1m patch lies about 1.3 miles E of the bank, in a position about 3 miles NW of Punta Gualaihue.

Ensenada Gualaihue recedes about 2 miles N between Punta Gualaihue and Punta Quebradlas, which is marked by a light, about 2 miles E. At HW, the bay appears spacious, but at low water its area is reduced two-thirds by a large drying flat which occupies the inner part of the bay. The flat terminates abruptly at less than 1 mile inside a line joining the two entrance points. A prominent church stands on the W side of the bay about 0.5 mile N of Punta Gualaihue. Cerro La Silla, a good landmark, stands about 1.5 miles N of Punta Gualaihue.

A rocky patch of unknown depth lies about 0.5 mile ENE of Punta Gualaihue. Isla Manzano lies on the S side of the flat in the E part of the bay.

Ensenada Gualaihue affords two anchorages, Caleta Manzano, NE of Isla Manzano and Caleta Gualaihue, NE of Punta Gualaihue. The first of these anchorages affords anchorage in its outer part to vessels of moderate size, with local knowledge, in 26m, good holding ground. Small craft with local knowledge can anchor in Caleta Gualaihue about 0.5 mile NE of Punta Gualaihue. A rock, awash, is reported to lie in the middle

of the cove and silting is reported E of Punta Gualaihue. Vessels should not get N of Punta Gualaihue Light.

Estero Pichicolu entrance lies about 4 miles ESE of Punta Gualaihue. The inlet recedes about 2.5 miles to the N and has a width of about 0.5 mile. A sandbank extends about 0.2 mile E from its W entrance point. The inlet is reported navigable by moderate-sized vessels almost to its head. Depths in mid-channel of 40m were reported. There is good anchorage, in 20m near the W side of the head of the inlet. The E side of the head of the inlet was reported to be foul.

Violent squalls blow down the length of the inlet, whatever the direction of the wind.

Puerto Llanchild (42°03'S., 72°36'W.) is situated close E of the E entrance point of Estero Pichicolu. The port consists of a small cove with depths of 11.9 to 14.6m, sand bottom. It is well-sheltered from W winds, but is subjected to violent squalls which come down Estero Pichicolu. A sawmill and a village are situated in the port.

Grupo Llanchild consists of about ten islands and islets which lie S of Estero Pichicolu and Ensenada Gualaihue. Canal Llanchild separates the group from the mainland to the N. Canal Llancahue separates the group from Isla Llancahue to the SE.

Isla Linguar (42°04'S., 72°39'W.) is the largest of the group and lies about 2 miles SSW of the entrance to Estero Pichicolu. The other large islands in the group are Isla Malomacun, close N of Isla Linguar, and Isla Llanchild, about 1 mile E of Isla Malomacun. Islita Cuchillo lies about 0.3 mile E of Isla Llanchild. Submerged rocks and shoals make the use of the channels between the islands impracticable, except for small craft with local knowledge. A conspicuous church stands on the NE extremity of Isla Llanchild.

Islita Maniu, lying about 0.5 mile NW of the NW extremity of Isla Llanchild, is difficult to distinguish against the latter when seen some distance to the W. When seen from a closer distance, the coffee color of Islita Maniu contrasts with the green of Isla Llanchild.

7.34 Canal Llanchild (42°03'S., 72°38'W.) leads between the island group and the coast to the N. The channel is 3 miles long and deep in mid-channel. Roca Huevo, awash, lies about 0.1 mile N of Islita Maniu. The channel is deep between these two features. Roca Blas, awash, fouls the channel S of Islita Maniu.

Caution.—The width of the channel is reduced to 0.1 mile between Isla Maniu and Roca Huevo, 1.5 miles W of the E entrance to this channel.

Canal Llancahue leads NE between Grupo Llanchild and Isla Llancahue to the SE. The channel has a least width of about 1.5 miles and is deep; there is a least charted depth of 107m in mid-channel.

Punta Piti Horno (42°03'S., 72°33'W.) lies about 3 miles ENE of Isla Llanchild, and forms the W entrance point of the W branch of Canal Hornopiren. Cerro Piti Horno, a prominent peak, stands about 2 miles N of the point.

Isla Pelada lies with its W side about 1 mile E of Punta Piti Horno. The island, of moderate height is rugged and has rocky shores. It is wooded on its higher parts.

Canal Hornopiren extends W, N, and E of Isla Pelada, turning at right angles at each change of direction. The channel has a uniform width of about 1 mile, with depths exceeding 101m, and is free of known dangers. The W side of the canal is formed by mountains with abrupt slopes and steep clear shores. The E side of the head of the channel is a large flat formed by the discharge of two rivers, the Rio Negro and the Rio Blanco. A light is shown from the W bank of the Rio Negro. Anchorage can be taken about 183m S of the light, in 20.1m, but local knowledge is necessary.

Volcan Hornopiren (41°54'S., 72°27'W.), with a snow-covered summit, stands about 11 miles NNE of Punta Piti Horno. It is the most prominent mountain in this vicinity, and is visible all over Golfo de Ancud and Seno Reloncavi.

Isla Cabras and Isla Lobos lie about 0.5 mile and 1.5 miles, respectively, WSW of the W extremity of Isla Pelada. Both islands are of moderate height and densely wooded. Reefs surround both islands; a 9.1m patch lies midway between them.

7.35 Isla Llancahue (42°07'S., 72°33'W.) lies about 0.8 mile S of Isla Pelada. The channel between the two islands is deep and free of dangers. When Cerro Calzoncillo, near the center of the island, is clear of clouds, it is said to be a sign of good weather. Islote Perras lies close offshore, NW of Punta San Francisco, the W extremity of Isla Llancahue. Islote Abel, with a rock awash close E of it, is about 1.5 miles NNE of Punta San Francisco, and about 0.4 mile offshore.

Caleta Andrade indents the N shore of Isla Llancahue for about 1.5 miles. Caleta Los Banos, about 1 mile E of the mouth of Caleta Andrade, affords anchorage to vessels of moderate size, but care is necessary when anchoring. Estero Bonito, on the SW side of the island, affords shelter to small craft during NE and NW winds.

Canal Cholgo (42°08'S., 72°29'W.) extends about 5.5 miles N and S between Isla Llancahue and the mainland to the E. The channel has a least width of 0.5 mile and is deep. Rada Potrereros de Cholgo indents the E side of Isla Llancahue near the N part of the canal. Small vessels with local knowledge can anchor here, in 35m, about 0.2 mile offshore, but this anchorage is exposed to heavy N squalls. The average rise of the tide at springs is 5m and the current is very light.

Estero Quintupeu (42°10'S., 72°26'W.) is located opposite the S end of Isla Llancahue. The inlet is very deep, except near the head, where there is a wide bank on which only boats can anchor. The anchorage is exposed to violent gusts which descend from the mountains.

Peninsula Huequi is located about 3 miles S of Isla Llancahue. The peninsula consists of a massive projection of high ground that extends about 21 miles N from the mainland. Volcan Huequi rises near the center of the peninsula, its peak is sharp and at times emits smoke.

7.36 Fiordo Comau (Estero Comau) (42°20'S., 72°30'W.) is entered between Punta San Francisco, the W extremity of Isla Llancahue and Morro Comau, the N extremity of Peninsula Huequi. The inlet extends about 19 miles SSE from Morro Comau, along the E side of Peninsula Huequi, and varies from 1 to 3 miles in width. Depths are quite deep throughout the inlet.

Pico Ulgade, an isolated cone of regular outline, dark in color and bare, but with patches of snow at the summit, and Pico Amunatagui, always snow-covered and visible all over Golfo de Ancud, lie on the E side of Flordo Comau.

There are numerous coves where small vessels can anchor close to shore.

Caution.—The most common winds are those from N or S. North winds enter the mouth of the inlet with a strength that is dangerous to small boats. South winds take the form of violent gusts which descend through the ravines.

7.37 Isla Liliguapi (42°10'S., 72°36'W.) lies in the entrance to Flordo Comau, midway between Punta San Francisco and Morro Comau. The island is high and visible for about 10 miles. There is a small town on the E coast of the island. Islote Ballena and some above-water rocks lie 0.3 mile E of the E end of the island. Canal Marilmo lies N of the island and Canal Comau lies S of the island; both canals are deep.

Caleta Marilmo, Caleta Telele, Caleta Soledad, Caleta Calle, and Caleta Porcelana are coves on the W side of Flordo Comau. All of these afford shelter to small craft. Caleta Leptetu lies on the SW shore and affords anchorage to small vessels. The Rio Leptetu discharges at the head of the cove.

Estero Cahuelmo (42°16'S., 72°26'W.) recedes about 2 miles to the E and is 0.5 mile wide at its entrance. There is well-sheltered anchorage, with plenty of swinging room, in 40 to 42m within the entrance. Beyond the entrance the depths shoal rapidly. Northwest winds blow strongly in the inlet.

Punta Cascada, about 3 miles SSW of the N entrance point of Estero Cahuelmo, has several waterfalls near it. Piedra Blanca, about 2 miles S of Punta Cascada, lies close offshore and is whitish in color. The rock is visible more than 6 miles.

7.38 Caleta Lloncochaigue (42°23'S., 72°28'W.) is about 2.8 miles SSE of Piedra Blanca. The waters of the cove are deep, with soundings of more than 40m at 91m offshore. Small vessels anchor on the N and S sides of the cove near the beach.

Surgidero Bodudahue lies on the E side of the head of Estero Comau. The anchorage is deep, the S shore being steep-to. Vessels with local knowledge can anchor, in 40m, about 0.1 mile off the N or E shores of the anchorage. This anchorage should not be used during N winds.

Morro Comau (42°11'S., 72°36'W.), the N extremity of Peninsula Huequi, is a high rounded promontory which slopes steeply to the sea, and is visible more than 8 miles. Caleta Velero and Caleta del Ray lie E and W, respectively, of the point. These coves are suitable only for small craft.

The coast trends about 13 miles WSW between Morro Comau and Punta Chulao. Islita Poeguapi lies on the coastal bank about 4.8 miles WSW of Morro Comau. A conspicuous church is situated on the coast about 0.5 mile SW of Islita Poeguapi. Surgidero Poeguapi, about 0.5 mile ENE of Islita Poeguapi, affords anchorage to vessels of moderate size in 18.3m, and should only be used in good weather.

Punta Baja (42°14'S., 72°45'W.) is low and wooded. The coastal bank dries 0.2 mile offshore between Punta Baja and Morro Comau. The coastal bank between Punta Baja and Punta Chulao, about 6 miles SW, dries 0.5 mile offshore.

Estero Huequi is shallow and available only to small craft. Surgidero Huequi affords anchorage to moderate size vessels

with local knowledge, in 20.1m, about 1.5 miles SW of the S entrance point of Estero Huequi, and about 1 mile offshore.

Punta Chulao (42°18'S., 72°51'W.) lies about 4 miles SW of Estero Huequi and shows a light. The coastal bank dries for a distance of 1 mile NNW of the point. Shoal water lies 1 mile W of the light and 1.3 miles WSW of the light. A shoal patch, with a depth of 3.6m, lies about 1.5 miles S of the point.

Caleta Ayacara lies with its entrance about 2.5 miles SE of Punta Chulao. Punta Huequi forms the W entrance point to the cove. The cove affords good anchorage in moderate depths. Anchorage can be taken, in 28m, about 0.2 mile offshore, with a group of three houses on the N shore bearing 283°, 3.5 miles distant. A conspicuous white chimney stands at the head of the cove. A light is shown on the E side of the cove near a conspicuous white painted cave.

7.39 Isla Ica (42°22'S., 72°48'W.) is 2 miles S of Caleta Ayacara Light. Between the island and the mainland is a channel about 0.5 mile wide, which affords an anchorage. A rock, awash, lies 1 mile SE of the island.

Caleta Buill is located about 5 miles SE of Isla Ica. The N shore of the cove is low and flat, and the S shore is cliffy and steep-to. Roca Yelcho, a prominent white painted rock with a red "Y," is located on the S side of the cove. A light is shown on the S side of the cove near its head. A conspicuous bridge and school are visible within the cove.

The cove affords anchorage, in 29m off its SW shore. The cove is exposed to violent gusts which descend through the ravine at its head.

Fiordo Renihue (Estero Renihue) (42°30'S., 72°45'W.), the entrance of which lies about 2.5 miles S of Caleta Buill, is about 12 miles long, with a least width of 1 mile. The Rio Renihue discharges at the head of the inlet and a sandbank extends 0.5 mile N from its mouth. The bank is steep-to on its outer edge.

Estero Pillan, on the W shore of Estero Renihue at its head, has depths of 20 to 29m, but has not been closely examined. The entrance channel, between the N shore and the edge of a steep-to bank formed by the Rio Renihue, is only 50m wide, with depths of 5 to 6m.

Punta Chumilden, the SW entrance point of Fiordo Renihue, rises gradually to the SW and is thickly wooded. A light is shown about 0.8 mile SW of the point. A settlement, with a conspicuous church, stands about 1.3 miles SW of the point, while a monument stands on the point's NW side.

Several islets lie W and SW of Punta Chumilden. Between these islets and the mainland there is good anchorage for small vessels with local knowledge, in 20.1m. The anchorage is sheltered from SW and W winds. The entrance, between the point and the NW of the islets, is about 30m wide with a depth of about 9.1m. A conspicuous monument stands on the shore at the head of the anchorage.

Golfo Corcovado

7.40 Golfo Corcovado extends from Punta Quiquel, on the W, and Punta Tengo, on the E, about 60 miles S to Buca del Guafo. It has a least width of about 20 miles. Golfo de Ancud is a N continuation of the gulf. Canal Moraleta extends about

100 miles S from the S end of Golfo Corcovado. A number of small ports are situated on the shores of the gulf.

The gulf is deep, with depths over 183m in some parts. The depths between the islands are irregular and there are a number of shoals.

The direction of the flood tide is always to the N and the ebb tide is always to the S. The tidal currents entering the gulf from Boca del Guafo after strong W winds have rates of 3 to 4 knots. At the S end of the gulf, about 7 miles E of Isla San Pedro (43°22'S., 73°44'W.), the current sets NE with a rising tide and SW with a falling tide, at rates of up to 4 knots. In the center of the gulf the current rate is 1 to 2 knots. The rate of currents are variable in the narrow channels between the islands.

Caution.—Large patches of kelp grow in the vicinity of shoals in the N part of the gulf. The kelp extends in long lines in the direction of the currents, and are light green in color. The navigator should use caution when in the vicinity of kelp.

A submarine exercise area, the limits of which are shown on the chart, lies in the S part of Golfo Corcovado.

The IALA Buoyage System (Region A/B) is in effect in the area of Golfo Corcovado.

Golfo Corcovado—Northwest Side

7.41 Canal Dalcahue.—Punta Quiquel (42°22'S., 73°35'W.) is the NW entrance point of Golfo Corcovado, and the N entrance point of Canal Dalcahue. A church is situated about 0.8 mile N of the point.

The canal separates Isla de Chiloe from the N and W sides of Isla Quinchao. The channel is about 9.5 miles long and winding. Its average width is about 1 mile, but shoals reduce the navigable width to about 0.2 mile.

Bajo Dalcahue, a rocky patch with a depth of 4.8m, lies near the center of Canal Dalcahue, about 1 mile ENE of Punta Balseo, the NW extremity of Isla Quinchao. Banco del Astillo, with a least depth of 1m at its center, lies nearly 0.6 mile off the W shore of the channel S of Punta Balseo. The least depth in the canal, about 4m, is found opposite this bank.

An overhead cable, with a vertical clearance of 65m, crosses the narrowest part of the canal between Punta Balseo and the coast of Isla de Chiloe to the NW.

Two pairs of lighted range beacons on reciprocal bearings 159°-339°, lead through the shallow part of the canal E of Banco del Astillero.

The canal should not be attempted by vessels with drafts over 4m, and then only at not less than half tide. The currents set N with a rising tide and S with a falling tide, attaining rates of 4 to 5 knots at springs. The tidal rise at springs is about 5.5m.

Vessels traversing the canal from the N should pass S of Bajo Dalcahue; then, keeping in depths over 9.1m, round Isla Quinchao. Having passed the overhead cable, a mid-channel course can be steered until on the lighted range beacons. Pass SW of Bajo del Pasaje, then remain in mid-channel throughout the remainder of the channel.

Dalcahue (42°23'S., 73°39'W.) ([World Port Index No. 14230](#)) is the largest of several villages on the canal. A pier, 60m long, extends from the shore S of the village. The recommended anchorage is in 10m, about 0.3 mile SSW of the village church. A light is shown from the pier.

The coast from Punta Atal, the SW entrance point of Canal Dalcahue, trends about 5.5 miles SE to Punta Aguantao. Ensenada Pullao and Estero Rilan are small inlets close S and about 3 miles SE, respectively, of Punta Atal. Estero Rilan has anchorage for small craft.

7.42 Punta Aguantao (42°32'S., 73°35'W.) is conspicuous and easily identified. A light is shown from the point. A drying bank extends nearly 0.8 mile SE from the point. A buoy is situated off the point in anchor position 42°32.1'S, 73°34.0'W. Vessels can anchor, in about 35m, with the point bearing 051°, distant about 0.3 mile. The SE tidal currents sets strongly in this vicinity.

From Punta Aguantao the coast trends about 7 miles WSW to Punta Tutil, the SE entrance point of Estero Castro. Caleta Rilan and Caleta Carahue are situated about 2.5 miles W and 5 miles WSW, respectively, of Punta Aguantao. These coves afford good anchorage in moderate depths, with good holding ground, to vessels with local knowledge. The coastal bank extends about 0.2 mile SE from Punta Tutil.

Estero Castro (42°30'S., 73°45'W.), entered between Punta Tutil and Isla Linlinao, about 1.3 miles WSW, penetrates about 10 miles into Isla de Chiloe. The inlet is about 1 mile wide at the entrance, narrowing gradually to a width of about 0.5 mile at Punta Animo, on the E side of the channel about 3.5 miles NW of Punta Tutil. Just beyond, at Punta Peuque, 0.7 mile N of Punta Animo, the inlet widens again, but shoals which fringe the W shore reduce the navigable width considerably. The depth along the fairway is sufficient for large vessels, with a least depth of 12.8m in mid-channel about 1.5 miles N of Isla Linlinao.

Caleta Yutuy lies about 1.5 miles NW of Punta Peuque and is mostly shoal. In case of necessity, a vessel can anchor in the cove on the line of the entrance points.

A shoal, with a depth of 2.7m, lies on the W side of Estero Castro, about 0.5 mile N of Punta Peuque.

Lights are shown on Isla Linlinao, Punta Animo, Punta Peuque, and from the mole in Puerto Castro. A lighted buoy is moored about 0.4 mile E of Punta Castro.

7.43 Puerto Castro (42°29'S., 73°46'W.) ([World Port Index No. 14220](#)) is situated in the outer part of a cove which is entered between Punta Castro and Punta Tenten, about 1 mile to the NE. There are depths of 9.1 to 11m between the entrance points. The inner part of the cove dries.

Depths—Limitations.—A pier, the Fiscal Wharf, is 70m long with a depth alongside of 6m. No cranes are available. Vessels use ships own gear. There are six lighters with a total capacity of 400 tons. The port can be contacted by VHF channel 16 and radiotelephone.

A sheltered offshore berth, with mooring buoys, for tankers is situated at Rauco, on the W shore of the estuary. Tankers secure to the mooring buoys in a depth of about 16m.

Pilotage.—There is no pilot. Patagonian pilots will assist, if required.

Anchorage.—Anchorage can be taken, in 14.6m, about 0.7 mile NE of Punta Castro. Punta Tenten is shoal for about 0.2 mile S and should be avoided. Vessels carrying explosives should anchor E of Punta Tenten. The harbor bottom is reported to be composed of mud and sand, good holding ground.

When approaching the anchorage off Puerto Castro, vessels should stay close to the E shore of Estero Castro until S of Punta Pello, which lies E of Punta Tenten, then steer directly for the anchorage, thus avoiding the bank which extends SE from Punta Castro.

7.44 The coast of Isla Linlinao and Punta Ahoni, about 14 miles to the SE, is indented with a number of inlets. Canal de Yal is located in this section of the coast.

Caleta Linlinao (42°35'S., 73°46'W.) recedes about 0.5 mile NW between Isla Linlinao and a point about 0.2 mile to the SW. The outer part of the cove contains depths of up to 31m, which decrease near its head. Small vessels can anchor, in 18.3m, in the outer part of the cove while awaiting favorable weather conditions to enter Estero Castro or to proceed S through Canal de Yal.

Puerto Chonchi (42°37'S., 73°46'W.), a small bay, lies 3 miles S of Isla Linlinao. The village of Chonchi, at the head of the bay, has a pier. The pier extends about 137m to the E and 61m SE from the shore. There are depths of 7m alongside the seaward side, and 6.4m alongside the inshore side, of the outer leg of the pier. A light is shown from the head of the pier. Anchorage can be taken, in 37m, about 0.3 mile ENE of the pier.

Punta Yal (42°40'S., 73°40'W.) lies about 5.5 miles ESE of Chonchi and is conspicuous. A prominent yellow house stands on the SW shore of Canal de Yal, about 4 miles WNW of Punta Yal. Islote Yal, on which a light is shown, lies about 0.4 mile N of the point. The narrow channel between Punta Yal and Islote Yal has sufficient depths for small vessels, but the currents here attain rates up to 4 knots and the channel is not recommended. The channel N of Islote Yal is wide and deep.

Bahia Yal recedes about 1.5 miles W from between Punta Yal and Punta Terao, about 1.8 miles to the SE. Anchorage can be taken a little over 0.3 mile off the W side of the bay, in 31 to 40m, but this anchorage is not recommended as the bay is open to the NE.

Caleta Yal (42°41'S., 73°40'W.) lies in the N part of Bahia Yal. Halfway to the head of the cove there is good anchorage, for vessels with local knowledge, in 10 to 20.1m. A hill on each side of Caleta Yal form good landmarks for recognizing Bahia Yal and Caleta Yal.

From Punta Terao, the SE entrance point of Bahia Yal, the coast trends S to SE to Punta Ahoni. A large bight is formed between the two points. The shores of the bight are shallow from 0.1 to 0.2 mile offshore. Inland from the coast, the land rises progressively, and wooded tracts can be observed.

Golfo Corcovado—Northwest Side—Off-lying Islands

7.45 Isla Quinchao and Isla Lemuy, with several islands lying between them, are the principal islands lying off this section of coast. Grupo Chaulinec, consisting of three islands, lies E of the above islands. The inner track through the N part of Golfo Corcovado leads between the islands.

Isla Quinchao (42°29'S., 73°30'W.), about 17 miles long, extends NW from Punta Cheguian to Punta Balseo. The island is one of the most populated in the area. The NW part of the island consists of high hills; the NE side is cliffy, while the rest

of the island is rocky, broken by sandy beaches. A number of villages are situated about the island.

Punta Palqui, the NE extremity of the island, shows a light. Anchorage, sheltered from W winds, can be taken about 0.3 mile S of the point.

Achao (42°28'S., 73°30'W.), the largest village on the island, lies about 3.5 miles SSE of Punta Palqui. A pier, about 152m long, with a depth of 1m at its head, is situated at the village. A light is shown from the root of the pier.

The roadstead of Achao affords anchorage, in about 25m, about 0.2 mile NNW of the head of the pier. Small vessels can anchor, in 18.3m, about 0.1 mile NW of the head of the pier.

Punta Cheguian (42°35'S., 73°24'W.) is the SE extremity of Isla Quinchao. Shoals and rocks lie E and SE, up to 1 mile from the point. The above foul ground is covered by a red sector of Isla Imelev Light.

Punta Matao, about 2.8 miles WNW of Punta Cheguian, has a reef extending nearly 1 mile W from it. The coast turns N, forming Estero Matao and Estero Quinchao, in the entrance of which are settlements of the same name. A shoal, with a depth of 5m, lies about 0.8 mile WNW of the church at Quinchao.

Canal Quinchao (42°30'S., 73°28'W.) extends along the NE coast of Isla Quinchao, from Punta Palqui to Punta Cheguian. It has a least width of about 2 miles and is deep. A mid-channel course will clear all dangers.

7.46 Isla Chelin (42°34'S., 73°32'W.) lies about 2.5 miles off the SW coast of Isla Quinchao. Anchorage can be taken, in about 24m, on the S side of the island, about 0.4 mile SW of a church near the SE end of the island. Bajo Chelin, with a depth of 2.8m, lies 2 miles W of the N extremity of the island. A buoy is moored about 0.5 mile NW of the shoal.

Isla Quehui lies S and SE of Isla Chelin, the channel between being 0.5 mile wide and deep in mid-channel. A light is shown from the SW point of the island. A conspicuous house stands nearly 1.3 miles ENE of the light.

Estero Pindo, on the NW coast of Isla Quehui, nearly divides the island in two parts. This inlet affords good anchorage to vessels with local knowledge SW of Huillo Church, near the N entrance point. This is one of the best anchorage areas, being sheltered from all winds. The N entrance point, S of the church, can be approached to within 30m, in a depth of 14.6m. A light is shown from this point.

Vessels with local knowledge can obtain good anchorage, in 9.1 to 16.4m, off the E end of Isla Quehui. The anchorage is about 0.8 mile SW of the light on Isla Imelev. Anchorage is afforded off the SW end of Isla Quehui, about 0.3 mile ESE of the light. Small vessels can anchor about 1.5 miles E of the light.

Isla Imelev (42°37'S., 73°25'W.) lies about 0.5 mile ENE of the E extremity of Isla Quehui, and is connected to the larger island by a reef which dries. The island is triangular in shape. A light is shown on the SE end of the island. A beacon stands near the E extremity of the island. A bank, part of which dries, with rocks, awash, extends 1 mile SE from the SE end of the island.

Bajo Johansen, about 0.5 mile in extent with a depth of 2.7m, lies about 4.5 miles SSE of the SE end of Isla Imelev. A buoy is moored on the bank.

7.47 Bajo Apabon (42°41'S., 73°27'W.), with depths of less than 1.8m, and rocks awash, lies with its W extremity about 2 miles ESE of Punta Apabon, on Isla Lemuy. The currents are strong and irregular over this shoal. A metal tripod beacon stands on the N side of the shoal.

Isla Lemuy (42°37'S., 73°38'W.) is about 8 miles long, E to W, with an average width of 4 miles. Puqueldon is the principal town on the island and is situated on its N coast. Vessels with local knowledge can anchor off the town.

Estero Ichuac indents the W side of the island. The entrance is narrow and exposed to W winds, but good anchorage for small vessels is afforded in the central part of the inlet, in depths of 11.9 to 20.1m.

Promontorio Detif constitutes the SE extremity of Isla Lemuy and is connected to the island by a low, narrow, sandy isthmus about 1 mile long. Punta Detif, the SW extremity of Promontorio Detif, is steep-to on its W side. The SE side is fronted by a reef which extends 0.8 mile offshore. A reef extends 0.2 mile E from Punta Apabon. All these reefs are covered with kelp and should be passed at least 0.5 mile from their outer limits.

Canal Lemuy (42°34'S., 73°40'W.) leads between Isla Lemuy and Isla de Chiloe for a distance of about 7 miles. It is deep and clear of dangers. When entering from the N, vessels should pass W of Bajo Chelin.

Canal de Yal, a continuation of Canal Lemuy, has its N entrance between Isla Linlinao and Punta Yelqui, the N extremity of Isla Lemuy. The channel is somewhat irregular and winding, narrow at its W side, but deep and clear throughout. An overhead cable, with a center elevation of 28m, spans the narrow W side, about 2.5 miles W of Islote Yal. This cable is radar conspicuous, but produces confusing echoes. In traversing the canal, vessels should pass N of Islote Yal, which shows a light.

The tidal currents in the canal are generally weak, but in the narrows they attain a rate of 2.5 to 3 knots.

Caution.—The narrow passage between Islote Yal and Punta Yal is not recommended, due to strong tidal currents.

7.48 Grupo Chaulinec (42°37'S., 73°16'W.) consists of Isla Alao, Isla Chaulinec, and Isla Apiao. The islands are generally flat or with easy slopes, and thickly wooded.

Isla Alao (42°36'S., 73°18'W.) lies with its W end about 2.8 miles E of Punta Cheguian. A beacon, painted white with red horizontal stripes, stands at an elevation of 40m close N of the W extremity of Isla Alao. The S shore of the island is clear, but the N shore is foul up to 1 mile off. There are no suitable anchorages about the island. Bajo La Barra, about 1 mile in extent, with a least depth of 1m, lies 2.5 miles NNW of Punta Alao. A buoy is moored on the NW side of the shoal. The shoal is covered by the red sector of Isla Imelev Light.

Canal Alao lies E of Isla Alao. The canal is 1 mile wide, deep in the middle, and free of dangers. Currents in the canal attain rates of 5 to 6 knots at springs.

Isla Apiao (42°36'S., 73°13'W.) lies about 1 mile E of Isla Alao. Punta Apiao, the N extremity of the island, is conspicuous. A bank of foul ground extends 2 miles NNW from the point. A church stands near the coast on the W side of the

island. A bank, with depths of 11m, lies between 3 and 4.5 miles E of Punta Apiao.

Bahia Pilcomayo, on the S side of Isla Apiao, has good holding ground and moderate depths. Small vessels with local knowledge can obtain anchorage in the bay, in a depth of about 11.9m.

Isla Chaulinec, the largest island of the group, lies S of Isla Alao and Isla Apiao, and is separated from these islands by Canal Chaulinec. A light is shown from Punta Manzano, the S extremity of the island.

Shoals extend up to 0.5 mile S from Punta Manzano and from the middle of the S side of the island. An 11m patch lies about 0.8 mile NE of Punta Manzano. Bajo Chaulinec, a rocky patch, awash, lies about 1 mile N of Punta Huelmo, the W extremity of the island.

A light is shown from a position about 0.1 mile N of the church at Tres Redes. Good anchorage, in 20.1m, can be obtained off Tres Redes, a village 2.5 miles E of Punta Huelmo. The anchorage lies about 0.2 mile N of the church in the village.

Canal Chaulinec (42°37'S., 73°19'W.) is deep and free of dangers in mid-channel. In the E entrance the tidal currents attain rates of 5 to 6 knots. Vessels should avoid Bajo Chaulinec when approaching the channel from the W.

Paso Imelev is formed between Grupo Chaulinec on the E and by Isla Imelev and Punta Cheguian on the W. The channel is about 2 miles wide, but its navigable width is reduced to 1 mile by dangers on each side. The channel is well-traveled by vessels having due regards to the dangers it contains.

The currents of the rising and falling tides in Paso Imelev set N and S, respectively. The rate of the currents depend on the stage of the moon. Heavy tide rips form here, and when the current and wind are opposed, a rough sea is formed.

Golfo Corcovado —Northeast Side

7.49 Punta Tengo (42°37'S., 72°52'W.) lies 7.5 miles SSW of Punta Chumilden. The point is surrounded by foul water that extends 0.5 mile offshore. Rocas Tengo, awash, lie about 1.5 miles SSW of the point and about the same distance offshore. The channel E of the rock is suitable only for small craft.

Isla Llahuen, about 3.8 miles S of Punta Tengo, is low and wooded. Rocks extend 1.5 miles NW from Punta Aro, the W end of the island.

Bahia Pumalin (42°42'S., 72°50'W.) is entered between Punta Robles and the S end of Isla Llahuen. A rock, awash, lies in the approach to the bay. There are other dangers in the bay, making it available only to small craft with local knowledge, and drawing less than 3.5m.

Caleta Munoz is a small cove about 1.3 miles S of Punta Robles. A conspicuous barracks and several cabins are situated at the head of the cove. Large vessels can anchor, in 36 to 42m, about 0.2 mile offshore. Smaller vessels anchor W of the barracks in less than 15.5m, about 0.1 mile offshore.

Punta Chana (42°46'S., 72°51'W.) lies about 3.8 miles S of Punta Robles. The Rio Rayas, the largest river in this area, discharges N of Punta Chana. The river water discolors the sea water in the vicinity. A light is shown from the point.

Off-lying Islands and Dangers

7.50 Grupo Deserto lies between 3 and 11.5 miles offshore between Punta Tingo and Punta Vilcun, being separated from the mainland by Canal Deserto. There are six principal islands and several islets in the group. The channels among the islands are seldom used, as Canal Deserto and Canal Apiao are the principal channels through the N part of Golfo Corcovado.

Vessels seeking an anchorage among the islands should exercise caution in approaching them, as many rocks surround the islands and extend from their salient points. In addition, uncharted dangers may exist in the area. The tidal currents attain rates up to 6 knots, with overfalls and eddies, between the islands.

Islote Nihuel (42°38'S., 72°56'W.) lies nearly 4 miles W of Punta Tingo. Foul ground, with rocks awash, extends about 0.5 mile NW and about 1 mile S from the islet. Islote Nihuel can be passed on either side, but the channel to the E is recommended as it is straight, and passes well clear of the foul ground extending S from the islet.

Isla Chulin, the N of the group, is of moderate height and terminates in the S in Punta Chulin, which is low. Bajo Navarro, over which the sea breaks with NW winds, extends 1 mile S from Punta Chulin. Foul ground extends up to 0.8 mile off the N and NW sides of the island. An above-water rock lies 0.5 mile NE of Punta Espinosa. Depths of less than 10.1m extend 0.9 mile W from Punta Cor. A light is shown from Punta Cor, the W extremity of the island.

Ensenada Manzano lies E of Punta Gaona, a point about 1.5 miles SE of Punta Cor. A church stands at the head of the bay. Anchorage can be taken about 0.5 mile SSE of Punta Gaona, in 18.3m, good holding ground.

7.51 Rocas Barrientos (42°35'S., 73°03'W.) lie from 1 to 1.5 miles N of Punta Espinosa. The rocks are the N danger of this group of islands, and dry 0.3m.

A shoal, with depths of 11.9 to 19.2m, lies in the N approach to Canal Apiao, from 3.8 to 4.8 miles NW of Isla Chulin Light.

Isla Chuit (42°40'S., 73°05'W.) lies about 2 miles SW of Isla Chulin. The island is surrounded by foul ground except on its SE side. The channel between these two islands is about 2 miles wide and deep in mid-channel. Vessels should pass S of Bajo Navarro and N of Bajo Driver and Roca Naranjo, taking into account the currents, which set N in the vicinity of Roca Naranjo.

Isla Imerquina lies with its NE extremity about 1 mile SW of Isla Chuit. The island is surrounded by foul ground with rocks, awash, off the NW end of the island. The channel between Isla Imerquina and Isla Chuit should not be attempted without taking soundings.

Bajo Inconveniente (42°41'S., 73°11'W.), with a depth of 6.7m, lies in the center of Canal Apiao, about 3.5 miles W of Isla Imerquina. An 14.6m patch lies about 0.8 mile N of this shoal.

Bajo Imerquina lies between 0.3 and 1.3 miles SW of the SW side of Isla Imerquina. The shoal has rocky heads at its N and S ends. The shoal is marked by kelp and the depths over it, as well as those surrounding it, are very irregular.

Vessels should not attempt to enter the channel between Isla Imerquina and Isla Ahullini and Isla Nayahue, two islands to the S.

Isla Ahullini and Isla Nayahue are the SW islands of the group. Both islands are high and wooded. A church and a small group of houses stand on the W side of the N extremity of Isla Nayahue. Foul ground extends 0.3 mile off the W side of Isla Ahullini, and 1.3 miles WSW from the S end of the island. Foul ground extends 0.5 to 1 mile S from the S ends of both islands. A rock, awash, lies 0.3 mile NW of the NW end of Isla Nayahue.

Small vessels can anchor between the islands, in 20.1m, taking care to avoid the rock NW of Isla Nayahue. Small vessels can also anchor, in 11m, in a cove on the N side of Isla Nayahue, with the church bearing 190° and the W entrance point of the cove bearing 290°.

Bajo Solitario (42°47'S., 73°10'W.) lies about 5 miles WSW of Isla Ahullini. There are rocks, awash, on this shoal, and parts of its W end dries. Heavy breakers form on this shoal at all times and it is covered with kelp which is hard to see at high water. A lighted buoy is situated SW of the shoal.

Bajo Minna, about 10 miles WSW of the S end of Isla Ahullini, has 0.9m on its W side; a lighted buoy is moored on the SW part of the shoal. A shoal, the position of which is doubtful, has been reported about 1 mile S of Bajo Minna.

7.52 Isla Talcan (42°45'S., 73°00'W.) is the largest and S island of the group. The island is deeply indented on its N and S sides by Ensenada Tenedor and Estero Talcan, respectively. Estero Talcan is available only to small vessels with local knowledge. The entrance to the channel of Estero Talcan is very narrow and almost full of kelp, with a current of nearly 6 knots.

Ensenada Tenedor opens to the W of Punta Cordenas, about 1.3 miles NW of Punta Tirua. The inlet has shoal water in all parts. Anchorage can be taken about midway between the entrance points of the inlet, seaward of a line joining these points.

Roca Naranjo is above water and shows a light. Good anchorage, in 19.2m, can be taken about 0.2 mile ESE of Roca Naranjo.

Bajo Driver (42°41'S., 73°02'W.), which dries, lies 1 mile N of Punta Beltran. Two rocks, awash, lie midway between Roca Driver and Roca Naranjo.

Bahia Edwards is a small bay on the W side of Isla Talcan, about 2.8 miles SSE of Punta Beltran. Small craft with local knowledge can anchor, in 12.8 to 15.5m in the bay. The anchorage is near the middle of the bay, about 137m NW of a submerged rocky patch marked by kelp. Islote Jorge lies close S of the bay. Bajo Salvo, a group of dangerous rocks, awash and marked by kelp, lies from 1.3 to 1.8 miles SSW of Islote Jorge. A church stands on the NW side of Isla Talcan.

7.53 Canal Apiao (42°39'S., 73°10'W.) leads between Grupo Chaulec and Grupo Deserto. The channel has a least width of about 5 miles and is deep. The only dangers in the channel are those extending from the islands and Bajo Minna, Bajo Inconveniente, and Bajo Solitario. Vessels should pass NW of Bajo Inconveniente when traversing Canal Apiao. The current of the rising tide sets W toward Canal Chaulec,

and caution must be exercised to avoid being set onto the dangers extending from the islands of Grupo Chaulec.

Canal Desertoires leads between Islote Nihuel and Isla Talcan on the W, and the mainland coast on the E. The canal has a least width of about 2.8 miles and a least depth of 64m in mid-channel. Islote Nihuel can be passed on either side; however, the passage E of the island is the recommended channel.

Golfo Corcovado—Southwest Side

7.54 The coast between Punta Ahoni and Punta Chiguao, about 24 miles S, is indented by a number of large inlets, among which there are a number of anchorages. Several islands and dangers lie off the coast.

Punta Ahoni (42°45'S., 73°33'W.) lies S of the S side of Isla Lemuy. The point is dome-shaped and covered with vegetation. A shoal, with 2.7 to 9.1m over it, extends 0.8 mile off the point; the shoal is covered with kelp, and continues in a SE direction for about 3.5 miles to abeam of Punta Leblun. Off Punta Ahoni the current of the falling tide sets SE at a rate of about 2 knots.

Punta Leblun, about 3.5 miles SE of Punta Ahoni, is low and sandy. Ensenada Libno, in which occasional anchorage can be found, lies about halfway between the two above points. The village of Leblun, with a church, stands close onshore.

Bajo Vettor Pisani (42°46'S., 73°28'W.), about 2 miles long, N to S, and nearly 1 mile wide, lies about 2 miles NE of Punta Leblun. A lighted buoy marks the SW side of the shoal. It is recommended to pass E of the shoal.

Cabo Aitui, about 2 miles SSE of Punta Leblun, is low, rugged, and rocky. The coast between the points should be given a berth of at least 1 mile. The village of Aitui with a church stands near the point.

Bajo Aitui (42°46'S., 73°28'W.) extends up to 2 miles offshore between Cabo Aitui and Punta Chomio. Several rocks on the shoal dry at LW. With any wind, heavy breakers form over the shoal. A buoy is moored on the outer part of this danger, about 2.5 miles NNE of Punta Chomio.

Punta Chomio lies about 4 miles S of Cabo Aitui and shows a light. It consists of a sandy cliff on which a beacon stands. A shoal more than 0.5 mile in width, and on which two rocks show at LWS, fronts the point. The shoal and rocks are marked by kelp. A 5m patch lies about 0.7 mile ENE of Punta Chomio.

Bajo Cahlinao (42°55'S., 73°26'W.) extends about 1 mile W and E, and nearly 2 miles N from the N end of Isla Acui, which lies on the S part of the shoal. There is deep water 0.1 mile off the S side of the island. There is a channel between this shoal and Punta Chomio; navigation presents no difficulties, provided a mid-channel course is maintained.

Punta Queilen, about 1.8 mile SW of Punta Chomio, is long, narrow, and wooded, except NE of the point, which is sandy. The point can be approached to within about 0.2 mile. A light is shown about 0.3 mile NE of the point.

A depth of 15.9m lies about 0.5 mile, bearing 243°, from the light. A depth of 5m exists about 1.3 miles, bearing 231°, from the light.

7.55 Puerto Queilen (42°54'S., 73°30'W.) ([World Port Index No. 14210](#)) is a small bight located W of the peninsula which terminates in Punta Queilen. The bight extends N in Estero Mechai, at the head of which the Rio Mechai dis-

charges. Puerto Queilen and Estero Mechai have moderate depths with good holding ground, although the latter is narrow.

The town of Queilen stands about 1.3 miles NE of Punta Queilen. A conspicuous grove of trees and a church, close by, stand in the town. There is a small pier, but it cannot be used at HWS. A large amount of kelp is found in the vicinity of the pier. Small vessels and fishing craft anchor off the pier.

The best anchorage in Puerto Queilen is abreast the town, in a depth of about 18m, mud, with the conspicuous church (42°59'S., 73°35'W.) bearing 083°, distant 0.6 mile, and close N of a 10m shoal. Farther offshore the bottom is sand and rock.

Estero Mechai, at the head of Puerto Queilen, affords good anchorage for small vessels, sheltered from all winds.

Ensenada Detico lies 1.5 miles W of Estero Mechai. Islote Chagualin lies in the center of the entrance. The bay is about 0.8 mile wide and recedes about 0.5 mile to the N. The head of the bay is foul. A small village, with a conspicuous church, stands on the W shore of the bay.

Ensenada Detico provides anchorage, in depths of 18 to 26m, sand and mud, having regard to a shoal, least depth 8m, extending WNW from Islote Chagualin, which lies in the middle of the entrance.

Caleta Pilar (42°53'S., 73°33'W.) lies 1.3 miles W of Ensenada Detico. The cove affords good anchorage, in 10m, sand and stone, about 0.1 mile offshore.

Estero Pailad lies about 1.3 miles W of Caleta Pilar, and is about 3.5 miles long, but narrow. The inlet is useful only for small vessels with local knowledge. Larger vessels can anchor in the entrance where the depths are moderate. A 6.1m patch lies 0.2 mile off the W entrance point of the inlet.

Estero Compu (42°52'S., 73°40'W.) is entered between Punta Tumaumon and Punta Yategua, 2 miles S. The inlet is about 6 miles long and about 1 mile wide, except at its head. The depths in the inlet vary from 18.3 to 44m, sand and mud, and is free of dangers. Vessels with local knowledge can find good anchorage, in a depth of 29.3m. Caleta Compu lies on the S side of the inlet, about 2.5 miles W of Punta Aulen. It has a wooden pier, suitable for small craft, and can be identified by a church close W of the pier.

Punta Yategua constitutes the S entrance point of Estero Compu. Bajo Yategua, consisting of rocks with less than 1.8m over them and marked by kelp, lies between 0.5 and 0.8 mile N of Punta Yategua.

7.56 Isla Tranqui (43°01'S., 73°20'W.) lies with Punta Vilo, its NW extremity, about 0.8 mile SE of Punta Yategua and extends about 13 miles SE to Punta Centinela, its SE extremity. A chain of hills extends the length of the island. The shores are formed of sand and gravel, and the surrounding waters contain no dangers farther than 0.5 mile offshore except off Punta Centinela, where there lies a rock about 0.7 mile off.

Bahia Chauco lies N of Punta Vilo and affords anchorage, for vessels with local knowledge, in about 28m. Islote Conejos lies in the entrance of Bahia Chauco, about 1 mile NNE of Punta Vilo. The recommended anchorage is about 0.4 mile SW of Islote Conejos, which shows a light. The currents in the bay attain a rate of 5 knots at springs.

Ensenada Leutepo (42°57'S., 73°36'W.) lies between Punta Vilo and Punta Lobo, about 2.5 miles SE. Ensenada Mapue lies between Punta Lobo and Punta Alqui, about 2.8 miles ESE. A

church stands at the head of the latter bay. These two bays are suitable as emergency anchorages.

Caleta Alqui lies E of Punta Alqui and affords good anchorage, in 12m, about 0.2 mile offshore. The anchorage is abreast a flagstaff situated at a sawmill.

Punta Centinela (43°01'S., 73°20'W.), the SE extremity of Isla Tranqui, is one of the best landmarks in this region. A light is shown on the point. A rock, awash, and a 1.8m patch lie about 1 mile SE and 1 mile NE, respectively, of the point. A rock, awash, lies 8 miles N of the point. The point should be given a berth of at least 1.5 miles E of it to avoid the shoal water and strong currents in this vicinity.

Bajo Magallanes, about 1 mile in extent with a least depth of 11m, lies with its central part about 2.8 miles NNE of Punta Centinela. It is marked by kelp.

7.57 Bajo Bien Conocido (42°58'S., 73°09'W.) lies in the central part of Golfo Corcovado, between 7 and 11 miles ENE of Punta Centinela. The shoal has depths of less than 5.5m and patches of as little as 2.8m. Rocks, awash, lie on the NW part of the shoal.

Canal Queilen leads between the coast of Isla de Chiloe and Isla Tranqui. Its width varies between 0.5 and 2 miles. The tidal currents follow the direction of the coast and in the N part of the channel attain a rate of 1.5 knots. In the narrows of the W part of the channel, the current attains a rate of 5 to 6 knots at springs.

A 7.9m patch lies in the canal about 0.4 mile N of Punta Santa Maria. Vessels can anchor, in 9.1m, about 1 mile WNW of Punta Cuello, with fairly good holding ground.

Punta Cuello (42°59'S., 73°33'W.), the SW entrance point of Canal Queilen, is marked by a prominent hill at the end of a range which extends from the interior. Rocks, with less than 1.8m over them, extend 0.3 mile from the point.

Bajo Chagua lies nearly 1 mile SE of Punta Cuello. The shoal consists of rocks and gravel, and is marked by kelp. At spring tides, about 0.1 mile of it uncovers, with shoal water extending 183m from its central part. An 8m patch lies close S of Bajo Chagua.

Punta Queuman (43°04'S., 73°32'W.) lies about 6 miles SSE of Punta Cuello. A light is shown from the point. A bank of sand extends 0.3 mile E and 0.2 mile SE from the point.

Isla Chaullin lies about 3.3 miles ENE of Punta Queuman. The island is about 1.8 miles long and 0.3 mile wide. A shallow bank extends 0.8 mile off the E side of the island. Roca Navio, which resembles a small ship when seen from E or W, lies close off the S side of the island. Bajo Navio, on which there are rocks awash, extends nearly 2 miles S from the S extremity of Isla Chaullin.

7.58 Estero Huidad (43°05'S., 73°32'W.) recedes about 3.8 miles WNW from Punta Queuman. The entrance of the inlet is only about 65m wide between the coastal banks which dry on either side. The least depth in mid-channel is 10m. Inside the entrance the inlet is about 0.3 mile wide. Bajo MacIntyre, with a depth of 2.7m, lies in mid-channel about 1.5 miles WNW of Punta Queuman. Bajo Diez, a sandy shoal with a depth of 4m, lies in mid-channel about 0.3 mile W of Punta Queuman.

An overhead cable, with a clearance such that is not a hindrance to navigation, crosses the inlet about 1.3 miles WNW of Punta Queuman.

Tides—Currents.—The tidal currents have a normal rate of about 2 knots in the entrance of the inlet. At springs, the currents attain a rate of 4 knots in the narrows. Tidal currents are stronger on the N side of the inlet. The currents attain maximum rates of 5 to 6 knots at springs, between the entrance and Punta Carvajal.

Anchorage.—The best anchorage in the entire inlet is off the S shore, in 9.1 to 14.6m, a little over 1 mile WNW of Punta Carvajal. The N side of the inlet is not recommended for anchorage as the tidal currents are strong there. A pier is situated on the S shore of the inlet, about 1.3 miles WNW of Punta Carvajal.

7.59 Punta Chiguao (43°09'S., 73°29'W.) lies about 4.8 miles SSE of Punta Queuman. Banco Chiguao, a stony spit with rocks, awash, extends 1.8 miles S from the point. A 3.9m patch lies about 0.3 mile E of Banco Chiguao. A buoy is moored off the S end of Banco Chiguao.

Bahia Quellon is entered between Punta Chiguao and Punta Yatac, about 13 miles SW. The bay has three principal islands, Isla Coldita, Isla Laitec, and Isla Cailin. There are four channels between the islands, three of which are navigable.

In view of its size, ease of access, and moderate depths, this bay is perhaps the best in all the archipelago. At the head of the bay, in the N part, is the port of Quellon, the principal industrial center of the region.

Isla Coldita (43°13'S., 73°43'W.) lies in the W part of Bahia Quellon. The island is thickly wooded and forms one side of Canal Coldita, about 7 miles long, narrow, and encumbered with rocks, and is practicable only for boats. Caleta Tuquetui, on the E side of the island, provides a temporary anchorage for small vessels. Foul ground extends 0.5 mile N from Punta Queupue, the N extremity of the island.

Isla Mauchil lies close S of Isla Coldita. A rock, which dries, lies in the passage between the two islands. A light is shown from the SE extremity of the island.

Isla Laitec (43°14'S., 73°37'W.) lies between Isla Coldita and Isla Cailin, separated from the first by Canal Laitec, and from the second by Canal Yelcho. A light is shown from Punta Laitec, the S extremity of the island. A reef extends nearly 1.3 miles E from Punta Laitec. Bajo Laitec, with a least depth of 7.8m, lies about 3.5 miles SE of Punta Laitec. Bajo Errazuriz, nearly 1 mile long, N and S, and with 4m over it, lies with its central part nearly 2.5 miles E of Punta Laitec.

During S or SW winds, which prevail in this region, ripples are formed on Bajo Laitec and breakers on Bajo Errazuriz. During N winds there is nothing to mark these shoals.

7.60 Bajo Blanco (43°10'S., 73°40'W.) lies, awash, about 1.5 miles NNW of Punta Lill, the NW extremity of Isla Laitec. Above-water rocks lie up to 0.3 mile off this point.

Canal Laitec lies between Isla Coldita and Isla Laitec and can best be seen on the chart. To avoid the dangers in the canal, it is recommended to keep a little to the W of the middle of the channel, taking care not to go too close to Isla Coldita, the coast of which is bordered by a bank of 5.5 to 7.3m, with foul ground, extending 0.4 mile offshore.

Two pilot transfer areas, the limits of which are shown on the chart, lie in the vicinity of the canal.

Pilots for Canal Laitec, for vessels with a draft in excess of 12.2m, board 3.7 miles SSW of Isla Laitec Light or, for vessels under 12.2m in draft, at the S end of the channel.

These pilot boarding places are also used for embarking and disembarking channel pilots.

Isla Cailin (43°11'S., 73°34'W.) is the easternmost island in Bahía Quellon. The W part of the island is hilly and thickly wooded, while the E coast is low and cultivated. The S coast borders on a large rocky bank known as Banco Velahue. The E coast is also bordered by banks, but less extensive. Canal Chiguao leads between Isla Cailin on the W and Punta Chiguao on the E.

Punta Yelcho, the SW extremity of the island, is low and visible only a short distance. The headland which rises E of the point is high and steep. The point is clear on the N and W, and at low water a wide beach of sand uncovers.

Banco Velahue (43°12'S., 73°33'W.) extends S of Isla Cailin, between Punta Yelcho and Punta Direccion, a distance of about 4.5 miles. The rocky bank extends about 1.8 miles SE from the island and has been reported to be extending to the NE.

Canal Yelcho, between Isla Laitec and Isla Cailin, is about 0.5 mile wide at its narrowest part. The water in mid-channel is deep, but caution must be used to avoid Banco Velahue, and other dangers when approaching the canal from the S. The channel is suitable for use only in good weather.

Punta Direccion (43°11'S., 73°31'W.), the E extremity of Isla Cailin, is marked by a light. A detached rock, with a depth of less than 1.8m, forming the E side of Banco Velahue, lies 1.5 miles SSE of the point.

Bahía Huellonguen indents the N coast of Isla Cailin, between Punta Mayo and Punta Petronhue, about 1.5 miles to the E. The bay affords space for a number of vessels to anchor, in 24 to 29m, especially on the W side of the bay, as depths decrease rapidly on the E side. The holding ground is excellent, particularly near the W shore, and in the basin in the E part of the bay. At low water, stretches of beach uncover on the S shore of the bay.

Canal Chiguao (43°09'S., 73°31'W.) is the most dangerous of the navigable channels leading into Bahía Quellon. Because of the dangers, currents, and winding course, the mariner must use the greatest of caution.

Lighted beacons, in line bearing about 000°, are situated on Isla de Chiloe, about 0.8 mile NW of Punta Chiguao. This range leads through an inner leg of Canal Chiguao. The rear light was reported to be partially obscured by trees. The dangers in the canal can best be seen on the chart. Tidal currents in the channel attain a rate of 5 knots at springs.

7.61 Puerto Quellon (43°08'S., 73°38'W.) ([World Port Index No. 14200](#)) lies in a bight on the N shore of Bahía Quellon, about 6.5 miles WNW of Punta Chiguao. The port has a small ramp which is used by small craft with drafts up to 3m and a ferry from Chacabuco. It is considered one of the best ports in the Chonos Archipelago, but now only with regional movement, owing to the lack of lumber imports. There are no lighters available. A floating wharf, 183m long, with a depth of 10m alongside, is situated W of the ramp. It is recommended

that vessels using this wharf contact the harbormaster 2 hours in advance.

Pilotage.—There is no pilot. A Patagonian pilot will assist if required; VHF channels 9, 14, and 16 are available.

Anchorage.—There is an anchorage, in 12.1 to 18.2m, 3 miles SE from the passenger pier. This is now a busy ferry terminal for ro-ro traffic to Chacabuco port.

The currents in this area attain rates of 2 to 3 knots, and are variable and irregular in the channels.

Estero Yaldad, about 2.5 miles long and nearly 2 miles wide, lies about 5 miles W of Puerto Quellon. Isla Linague, with an islet about 0.5 mile N of it, lies in the E entrance of the inlet. A 2.7m patch lies about 0.5 mile S of the island. A rock, awash, lies about 0.5 mile W of the N extremity of the island.

Puerto Carmen (43°09'S., 73°46'W.) ([World Port Index No. 14205](#)) stands on the W shore of Estero Yaldad, about 1.3 miles WNW of Isla Linague. There is a sawmill and partially destroyed pier which dries alongside at LW. Vessels up to 10,000 grt enter the anchorage to load timber products.

Anchorage.—Good anchorage can be taken, in about 18.3m, about 0.8 mile W of the N extremity of Isla Linague. The best anchorage lies between Puerto Carmen and the mouth of a small river, 1.3 miles SSE. It is protected from the violent and frequent W winds.

7.62 Punta Yatac (43°20'S., 73°40'W.), the S entrance point of Bahía Quellon, is rocky, rugged, and wooded. Islotes Blanco, two prominent white rocky islets, lie about 0.4 mile SSW of the point.

Isla San Pedro lies in a bight between Punta Yatac and Punta Cogomo, about 8.5 miles to the SW. Canal San Pedro leads N of the island and Canal Guamblad leads W of the island. The island consist of a single high mountain and is the highest of all in the archipelago.

Canal San Pedro (43°20'S., 73°44'W.) is entered between Punta Yatac and Punta Boigue, the NE extremity of Isla San Pedro. It leads about 7 miles W and joins the N part of Canal Guamblad. Numerous rocks and shoals encumber the channel. Bajo San Pedro, with a least depth of 4m, extends about 1 mile N from the NE extremity of Isla San Pedro. Because of the strong currents and dangers, the canal is available only to small craft.

Small vessels with local knowledge can obtain good anchorage in Puerto San Pedro, a little over 1 mile WSW of Punta Yatac. The best anchorage is in 12 to 18m, about 1 mile WSW of Islotes Blanco, with Punta Boique bearing 146°.

Canal Guamblad, narrow and winding, leads along the W side of Isla San Pedro. Estero Guamblad leads W from the junction of Canal San Pedro and Canal Guamblad. Strong currents and dangers restrict the use of the inlet to small vessels only.

Islotes Guamblin (43°25'S., 73°44'W.), consisting of several conspicuous rocks, lie about 1 mile S of the S end of Isla San Pedro. Punta Cogomo lies about 3 miles W of Islotes Cuamblin. The point is of a dark color and easily recognized.

Golfo Corcovado—Southeast Side

7.63 The coast between Punta Vilcun and Punta Guala, about 55 miles S, is characterized by the imposing aspects of

the Andes Mountains. The outline of the coast is notably regular, and without important indentations other than the large openings of the valleys of the Rio Yelcho and the Rio Tictoc. Aside from these, the coast is unprotected and beaten constantly by W winds and sea.

A peculiar phenomenon of this region, which may lead the mariner to believe he is in the area of shoal water, is the earthy or red coloration of the waters, which is produced by the materials carried down in the waters of the Rio Yelcho and the Rio Corcovado, and which at spring tides, when the currents set with great velocity, are carried a considerable distance.

Caution.—Shoals have been reported to lie up to 5 miles off the coast between Punta Auchemo (43°02'N., 72°58'W.) and Punta Pucaihuen (43°10'S., 73°04'W.).

7.64 Punta Vilcun (42°50'S., 72°51'W.) lies 3.5 miles S of Punta Chana and is conspicuous. Monte Vilcun rises from the point and is wooded to its summit. It is conspicuous because of its regular conical form and is visible a long distance. When the coast is obscured by clouds, the mountain is always visible as a dark shape emerging from the water.

Volcan Minchinmahuida lies about 13 miles ENE of Monte Vilcun. It is a notable saddle-shaped mountain, always covered with snow.

Ensenada Chaiten (42°55'S., 72°47'W.) lies between Punta Islotes and Punta Garcia, the N extremity of Isla Puduguapi. The inner part of the bay is occupied by a bank of sand and mud, brought down by the Rio Yelcho and the Rio Chaiten; the remainder of the bay is deep, but offers no advantage, being quite open to the W. The bank was reported to be extending towards the pier. Caleta Pescadores lies at the head of the bay. There is a detached 2.5m patch 1.5 miles WSW of Punta Piedra Blanca, the N entrance point of Caleta Pescadores.

A light is shown on Punta Piedra Blanca. An aeronautical radiobeacon, with an obstruction light, stands about 0.8 mile SE of the above light. A small pier, in a poor state of repair, is situated at Punta Piedra Blanca, and has a depth of 6m alongside. The village of Chaiten stands at the head of the bay.

Small vessels with local knowledge can obtain anchorage in the entrance to Caleta Pescadores, about 0.2 mile S of Punta Piedra Blanca.

Isla Puduguapi is located on the SW side of Ensenada Chaiten. The island is thickly wooded and when seen from the W, appears as a large conical hill.

7.65 The Rio Yelcho (42°58'S., 72°45'W.) flows into the sea through a marshy delta blocked by hills N and S of Isla Puduguapi. About 2.5 miles inland, the river winds through a spacious valley between alluvial banks covered with dense vegetation. The river is available only to small craft.

Estero Palvitad is entered between Punta Becerra, the W extremity of Isla Puduguapi, and Punta Auchemo, about 4.5 miles to the SSW. The delta of the Rio Yelcho occupies the NE part of the inlet. Grupo Auchemo consists of several islands and rocks, and lies up to 1 mile offshore between Punta Auchemo and Punta Frias, about 3.3 miles to the E.

The inlet is deep, but is not a good anchorage. A least depth of 31m has been obtained 183m off the E shore. There are several small bays with moderate depths on the W shore.

Anchorage in these bays is safe only during good weather. The Rio Palvitad discharges at the head of the inlet.

Bajo Abreojo (43°01'S., 72°52'W.), nearly 1 mile N of Punta Auchemo, is a black rock which uncovers at very low tides. Roca Negra, which uncovers at low water, lies about 0.2 mile NNE of Punta Frias.

Puerto Yelcho is situated about 1.5 miles NE of Punta Frias. In approaching Puerto Yelcho, care must be taken to avoid the sandbank which extends about 0.5 mile S from Punta Errazuriz, the S entrance point of the Rio Yelcho. This bank dries at LW, but is not visible at HW. Vessels must give this bank a wide berth.

The anchorage at Puerto Yelcho is about 0.3 mile in extent, with depths of 12.9m to 44m, the former depth being about 183m offshore. When at anchor, a vessel must maintain vigilance in regards to Williwaws during N winds. These squalls, combined with the effects of current and tides, may cause difficulty in the anchorage.

7.66 Puerto Auchemo (43°01'S., 72°50'W.) lies about 1.8 miles NE of Punta Auchemo. The port should be entered from the E, as the W channel is narrow and used only by small craft. The port provides one of the best anchorages in the area. It is more than 0.5 mile wide and has depths of 29m to 50m, with good holding ground. The water in this vicinity is discolored because of sediment brought down by the Rio Yelcho.

Caution.—Caution should be exercised along this portion of the coast, as shoals may be encountered up to 5 miles offshore between Punta Auchemo and Punta Pucaihuen.

Cabo Alman is located about 3.5 miles SSW of Punta Auchemo. The coast between the two points is rocky, high, and wooded. A small yellowish islet lies close offshore, about 0.5 mile NNE of Punta Alman. A second islet lies close offshore, nearly 1.5 miles farther in the same direction.

Temporary anchorage is obtainable N of the yellowish islet, in a depth of 20m, sheltered from S winds. The position is not recommended during winds from the SW to NW.

Cabo Corcovado (43°08'S., 72°55'W.) lies about 3.5 miles SSW of Cabo Alman. The cape is the extremity of one of the spurs of Volcan Corcovado, which terminates here in a high, wooded bluff. Rocks lie up to 0.5 mile off the point.

Bahia Corcovado recedes about 5 miles SE between Cabo Corcovado and Punta Pucaihuen, about 13 miles to the SW. The shores of the bay are entirely unprotected and should not be approached. Moreover, the possibility of uncharted dangers exists in this vicinity.

Volcan Corcovado (43°12'S., 72°48'W.) lies 6 miles SE of Cabo Corcovado and is one of the most prominent peaks in this region; in clear weather it can be seen more than 80 miles. It rises to a very sharp point about 2,240m high, and is always covered with snow. El Morrillo, a small hill, lies about 3.8 miles SW of Volcan Corcovado and is conspicuous.

The Rio Corcovado discharges about 3.5 miles SW of El Morrillo. Sediment brought down by the river colors the water for some distance offshore, giving the appearance of shoals. The bar at the mouth is an extensive bank which projects 1.5 miles in a NW direction, and is marked for some distance by breakers, especially during W winds. The river is navigable by

boats for 35 miles from the entrance; beyond that distance progress is blocked by huge rocks, rapids, and trunks of trees.

7.67 Isla Linagua (43°17'S., 72°58'W.) lies 2.5 miles SW of the mouth of the Rio Corcovado. At low water the island is connected to the shore by a sandbank. A rock, awash, lies 0.3 mile W of the S extremity of the island. A shoal, with a depth of 5.8m, lies 0.3 mile E of the island.

Punta Pucaihuen (43°19'S., 73°04'W.), about 4.5 miles SW of Isla Linagua, is of moderate height, sandy, and wooded toward the interior. Shoal water, over which there are violent breakers with W winds, extend up to 2.8 miles off Punta Pucaihuen.

Punta Cucagua, about 7 miles SSW of Punta Pucaihuen, is the most salient point on this section of coast. Shallow water exist between these two points, and this part of the coast should be given a wide berth. A stranded wreck lies about 1 mile NNE of Punta Cucagua. The Rio Canev, which discharges about 2 miles NNE of the point, has a large waterfall near its mouth which is visible a considerable distance offshore.

Montes Yanteles, about 13 miles ESE of Punta Cucagua, consists of four principal peaks. The peaks are always covered with snow and can be seen for a great distance rising to about 2,051m.

7.68 The Rio Yeli (43°32'S., 73°02'W.) flows through a sandy beach at the head of Estero Yeli. The river has a dangerous bar, which can only be crossed at HW with local knowledge. The river is used mainly by fishermen. Morro Yeli forms the S shore of the river mouth.

Bahia Tictoc recedes nearly 7 miles E between a point close W of Morro Yeli and Punta Guala, about 13 miles to the S. A chain of islands, with off-lying islets and rocks, extends across the entrance of the bay and protects the bay from the wind and sea of Golfo Corcovado. Channels between the island are used only by vessels with local knowledge. The inner part of the bay contains four well-protected anchorages.

Cerro Miragualay (43°34'S., 73°00'W.) rises on the N side of Bahia Tictoc to an elevation of about 906m, and is distinguished by its conical form. The Rio Tictoc empties into the E side of the bay. The sediment deposited at the mouth of the river has formed a shoal which extends nearly 1 mile offshore, and has formed two sandy points. Punta del Rio, the W point, projects farther and is the most dangerous.

Isla Horadada lies about 3.3 miles S of Morro Yeli. A group of rocks, on which there are always breakers, lies about 0.8 mile W of the S end of the island. Isla Colocla, the largest island, is low at its S end and high at its N end. Isla Redonda, the S of the islands, lies about 3.8 miles N of Punta Guala. Isla Hernandez lies 0.5 mile SSE of Isla Colocla, and Isla Huepan lies about 1.3 miles N of Isla Hernandez. The remaining islets, rocks, and dangers can best be seen on the chart.

Puerto Tictoc (43°36'S., 72°57'W.), on the N side of the bay, is well-sheltered from W winds. The bottom of the cove is very irregular, but vessels can anchor, in 31 to 40m, about 0.3 mile NW of the E entrance point.

Caleta Silva Palma, about 0.8 mile E of Puerto Tictoc, affords good anchorage for vessels of moderate size, in 26m, about 183m offshore. Caution should be used in approaching both the above anchorages.

The E side of Bahia Tictoc terminates into two arms, Bahia Pescadores, which extends to the N, and Puerto Escondido, which extends to the S. Vessels of almost any size can anchor in the middle of Bahia Pescadores, in 40m. This anchorage is protected from all but SW winds. The best anchorage in Puerto Escondido is in the middle, in 28m. Vessels should not anchor near the head of the inlet as it is foul.

Anchorage can be taken by large ships, in 38.4m, sand, in the middle of Bahia Tictoc in position 43°37'S, 72°56'W.

Peninsula Coca (43°43'S., 72°55'W.), which forms the SE side of Bahia Tictoc, consists of high sheer mountains. The shores are rocky and steep-to. The peninsula is thickly wooded. Caution must be used when approaching the peninsula because of the currents in this area.

Canal de Moraleda—North Entrance to the East Entrance of Canal Darwin

7.69 Canal de Moraleda trends about 105 miles S from Islas Queitao at its N entrance to the E entrance of Canal Darwin, the principal channel leading from the W through Archipelago de los Chonos. The canal is about 3 to 7 miles wide in the N part between the dangers, but is restricted to a width of about 1.5 miles in the S part, where numerous dangers encumber it.

The land on the E side of the channel is generally high and rises abruptly from the sea. Some of the mountain peaks are snow-covered year round. The islands on the W side of the channel are generally lower than those on the E side. Monte Cuptana is the only peak on this side that has snow on its summit in summer.

Depths—Limitations.—Canal de Moraleda has not been completely examined. There is a least charted depth of 43m in the fairway between the N entrance and Canal Darwin.

Several dangers lie near the fairway, and others may exist. These known dangers are described in this sector with their related features.

Tides—Currents.—The tidal range in the Archipelago de los Chonos does not generally exceed 3m. The tidal currents in the E-W channels set generally E on the rising tide and W on the falling tide in the direction of the channels.

In the N entrance of Canal de Moraleda, the tidal currents set SE from Boca del Guafo on the rising tide and NW on the falling tide, at rates of from 1 to 3 knots. These currents apparently meet opposing currents in the vicinity of 44°05'S. South of this latitude, the tidal currents set generally N on the rising tide and S on the falling tide. In the vicinity of Isla El Gorro, the rates are from 0.5 to 1.5 knots.

In the S part of Canal de Moraleda, in the vicinity of Isla Pajel, the tidal currents set N to NNE on the rising tide and S to SSE on the falling tide at 2 to 3 knots.

West Side of the North Part of Canal de Moraleda—North Entrance to Cayo Blanco

7.70 Islas Queitao (43°43'S., 73°30'W.) consists of two islands and some adjacent rocks that lie in the middle of the N entrance of Canal de Moraleda. The W island is the highest and largest of the two and shows a light. The other islets are low and wooded. Above and below-water rocks lie up to 0.3 mile

W and N of the islands. A small islet, with rocks off its N and S ends, lies about 1 mile NW of the E end of the E island.

Small vessels can find shelter off the S entrance of the passage between the two larger islands. The depth is 18.3m, shells, with the E end of the W island in range with the W end of the E island. A 6.9m shoal lies about 0.2 mile SW of the W end of the E island. During strong S winds, anchorage can be taken with the light bearing 215°, 0.4 mile W of the coast, in 42m, rock, good holding ground.

Grupo Peligroso, the NE islets of the Guaitecas group, lies about 11.5 miles SSW of Islas Quietao and should be passed W to NE. Cerro Mantán (44°00'S., 73°39'W.) rises in the NE part of Isla Leucayec of the Guaitecas group and is fairly prominent from the N.

Islotes Locos (43°59'S., 73°27'W.), on the W side of the fairway, comprises two small islets with above and below-water rocks up to 0.5 mile N and NE, and about 0.3 mile S of them. A light is shown on the S and larger islet, which is wooded.

Islotes Riquelme lies about 3 miles SSW of Islotes Locos. A rock, awash, lies about 1.5 miles WNW of Isote Riquelme.

Isla Mulchey (44°08'S., 73°30'W.), which has been [previously described in paragraph 6.28](#), is the SW island of the Guaitecas group. Its E end lies about 8 miles S of Islotes Locos. The island is irregular in shape. Puerto Ballenas is a small cove on the SE side of the island. Isla Mike, with a 12m shoal, lies 0.2 mile off the E side of the island. Four small islets lie W and SW of Isla Mike. Anchorage can be taken in the middle of the cove, about 0.3 mile W of a waterfall on the E shore. The anchorage has depths of 29 to 35m, with good holding ground, except during NW winds.

Islas Los Quincheles is a group of islands that lies from 4 to 7.5 miles S of Isla Mulchey. Isla El Gorro (44°18'S., 73°28'W.), the SE island of the group, is sheer and barren, and shows a light. Foul ground extends about 114m E from it.

Penon Blanco (44°23'S., 73°32'W.), a detached rock with foul ground off its W side, and on which a light is shown, lies about 5.5 miles SW of Isla El Gorro. Anchorage can be taken during moderate weather about 137m off the rock. The bottom is sand and rock, good holding ground. Isla Ballena, with a rock close off its S shore, lies 3.5 miles N of Penon Blanco.

Isla Filomena lies with its NE end about 3.5 miles SSW of Penon Blanco. Foul ground, with above-water and submerged rocks, extends about 1 mile E from the SE point of the island. Isla Lagora, a low detached islet, lies about 1.5 miles SE of the above point.

Caution.—A 7m shoal patch in position 44°29.8'S, 73°34.9'W, has been reported to exist.

7.71 Isla Francisco (44°31'S., 73°38'W.), close S of Isla Filomena, is separated from it by a narrow passage. Several rocks lie on foul ground that extends nearly 1 mile E from the E end of the island. Isla Nassau, with an islet and rock close off its NW side, lies about 1 mile SE of the SE point of Isla Francisco. Small vessels can take temporary anchorage, in 9.1 to 37m, about 0.2 mile S of the point. This anchorage is known as Puerto Nassau.

Isla Cuptana is separated from the SW side of Isla Francisco and the islands to the W by a passage encumbered with islands

and rocks. Monte Cuptana, with double summits, and always covered with snow, rises near the center of the island. Puerto Cuptana (44°40'S., 73°38'W.), about 0.5 mile wide at its entrance and outer part, recedes about 6 miles to the SW into Estero Cuptana. The inlet is used mainly as an anchorage for fishermen. Only the outer part of the inlet is usable. Small vessels can anchor, in 28m, in the small cove at the S entrance point of Estero Cuptana, 0.1 mile from Punta Bornscheurer and Isla Medio.

Isla Letrero lies on the N side of the entrance to the inlet. The S side of the island has a pebble beach which is one of the few in this vicinity. Roca de Afuera, awash and marked by breakers, lies 0.15 mile E of the E side of Isla Letrero. The entrance channel is clear and about 0.5 mile wide, and is entered between Isla Letreros and Punta Bornscheure. The tidal currents attain rates of up to 2 knots and set in the direction of the channel.

Anchorage can be taken, in 26m, in the entrance, about 0.2 mile SSE of the W end of Isla Letreros or, in 70m, about 183m offshore on the N side of the inlet, about 1 mile W of Punta Bornscheure. The anchorages in Estero Cuptana are reported to be poor, with a bottom of rock.

7.72 Isla Sierra (44°44'S., 73°35'W.) lies close off the SE end of Isla Cuptana. The island lies on the N side of the E entrance of Canal Temuan, a narrow passage with a least depth of 22m in the fairway, which separates Isla Cuptana from Isla Transito. It has been reported that small craft with local knowledge can proceed through this channel and then N through Canal Perez Sur and Canal Perez Norte when the seas are heavy in Canal de Moraleda.

Isla Transito, just S of Isla Cuptana, forms the S shore of Canal Temuan. The island can be identified by a prominent mesa-shaped hill near the center of the E side of the island. The summit of the island is located on its NW side.

Grupo El Enjambre (44°48'S., 73°39'W.) comprise numerous islets and above and below-water rocks that lie up to 2 miles off the E side of Isla Transito. Cayo Blanco (44°47'S., 73°33'W.), a white rock, on which a light is shown, is the outermost of the group. The dangers in Grupo El Enjambre can best be seen on the chart.

Puerto Frances, an anchorage for vessels with local knowledge, lies off the E side of Isla Transito inside Grupo El Enjambre. The entrance channel, with depths of 16.4 to 33m, leads W between the group from a position about 1 mile S of Cayo Blanco. Roca Janequero, awash at low water, lies on the S side of the fairway.

Anchorage, restricted to within a radius of 0.3 mile, can be taken, in 16.4 to 33m, rock, mud, and sand, about 0.3 mile SW of the largest and innermost islet on the N side of the fairway. This islet lies close off the N entrance point of a small inlet on the E side of Isla Transito. The anchorage is with Cayo Blanco Light bearing 076°, distant about 2 miles.

Puerto Espanol (44°50'S., 73°41'W.) lies on the SW side of Isla Transito. Anchorage is afforded, in 18.3m, rocky bottom covered with sand and mud. This anchorage is sheltered from N winds.

The entrance is clear of dangers, but local knowledge is required due to the lack of soundings on the chart.

North Part of Canal de Moraleda to Punta Machelan—East Side

7.73 Isla Refugio (43°57'S., 73°13'W.) is separated from the mainland by Canal Refugio. The island is high, steep, and prominent from the N. Canal Refugio is narrow and deep, with several islets in its S end. Isla Yalac and adjacent islets lie about 1 mile off the SW side of Isla Refugio and are separated from it by Canal Pedregoso, a rock encumbered passage.

Isla del Barranco, with a prominent white cliff on its W side, lies about 1 mile S of the islets off the SW side of Isla Yalac.

Peninsula Sin Nombre (44°08'S., 73°11'W.) projects irregularly about 8 miles W from the mainland. The inlets on both sides have not been examined. A number of islets and rocks lie up to 1 mile N of the NW point of the peninsula. Monte Melimoyu, high, narrow, dome-shaped, and crowned with four peaks, rises about 14 miles ENE of the outer end of the peninsula. The NE slopes of the mountain have glaciers.

Roca Negra (44°09'S., 73°22'W.) lies about 4 miles W of the outer end of Peninsula Sin Nombre. The rock is easily distinguished by its black color.

Grupo Gala consists of a number of islands and rocks on the N side of the W entrance of Canal Jacaf, and lies from 1 to 5 miles S of the S side of Peninsula Sin Nombre. They lie on a foul bank which extends about 1.5 miles W from them and continues NNW to the outer end of the peninsula and obstructs the entrance to Seno Gala, an irregular and unexamined inlet that recedes NE and indents the mainland.

Isla Vico (44°19'S., 73°17'W.), which forms the S entrance point of the W entrance of Canal Jacaf, lies about 2.5 miles SW of the S island of Grupo Gala. The island lies about 0.5 mile off the NW side of Isla Atilio. A light is shown from the NW extremity of the island.

Roca Chacabuco, submerged, steep-to, and marked by seaweed, lies on the E side of the fairway of Canal de Moraleda, about 5.5 miles NW of Isla Vico. A lighted beacon is shown from the rock.

Isla Magdalena (44°35'S., 73°05'W.) is separated from the mainland by Canal Jacaf and Canal Puyuguapi. The W coast of the island fronts the E side of Canal de Moraleda. The NW and SW sides of the island are indented by several large but unexamined inlets. The outer edge of a dangerous shore bank, on which a number of islands and rocks lie in the approaches to the inlets on the NW side of the island, trends about 21 miles SSW from Isla Vico to Punta Calqueman.

Punta Calqueman (44°39'S., 73°28'W.), the W extremity of Isla Magdalena, is fairly prominent. A number of islets and rocks lie up to 2 miles S of the point.

Isla Senec lies about 4 miles SSW of Punta Calqueman. Foul ground and rocks extend about 183m to the N off the N end of the island. Isla Guayanac lies about 2 miles SE of Isla Senec, and a group of above-water rocks lies about 1 mile farther to the SE.

Punta Machelan (44°49'S., 73°24'W.), with rocks up to 1 mile NW of it, lies about 10 miles SSE of Punta Calqueman and forms the N entrance point of Canal Puyuguapi.

South Part of Canal de Moraleda—East Side

7.74 Isla Tuap (44°56'S., 73°30'W.) lies about 9 miles SW of Punta Machelan. A light is shown on the NW side of the island. The E side of Canal de Moraleda, between Isla Tuap and Isla Meninea, nearly 20 miles to the SSW, is encumbered with numerous dangers. Only those adjacent to the E side of the fairway are described below. The other dangers are described later in this sector.

Grupo los Yuyos comprise a number of islets and rocks that lie up to 1.5 miles SW of Isla Tuap. Isla Guia, the largest, has two prominent bluffs. A submerged rock lies about 0.2 mile SW of Isla Guia.

Isla Latolque (45°02'S., 73°32'W.) lies 5.5 miles SSW of Isla Tuap. The island is fringed with rock and foul ground up to 0.5 mile off its E side. Isla Auchile is wooded and lies 2.5 miles SW of Isla Latolque. The island has two summits, one sharp and one flat. A rock, with a depth of less than 1.8m, lies close off the NW end of Isla Auchile.

Isla El Morro shows a light and lies about 4.5 miles SSW of Isla Auchile. Foul ground extends 1.5 miles S from the S end of the island. Foul ground also lies off the N and E sides of the island.

Islote El Blanco (45°13'S., 73°39'W.), with a conspicuous white cliff on its N side, lies about 4.5 miles S of Isla El Morro. Foul ground, with a submerged rock at the outer end, extends about 1.5 miles N from Islote El Blanco.

Isla Meninea, rock-fringed and irregular, lies with its W end about 2.5 miles S of Islote El Blanco. This island is the southernmost of the islands on the E side of the fairway of Canal de Moraleda.

South Part of Canal de Moraleda—West Side

7.75 Several islands and rocks lie on the W side of Canal de Moraleda, between Isla Transito and Isla Teresa. They encumber the S entrance to Canal Perez Sur. Isla Lalanca lies about 1 mile S of Isla Transito. Isla Verde lies about 1 mile S of Isla Lalanca, and Grupo Blanco, a group of white rocks, lies about 1 mile farther S.

Isla Pajalo (44°58'S., 73°39'W.) lies 3 miles S of Grupo Blanco. Foul ground, with submerged rocks, and Roca Westoff, an above-water rock at the outer end, extends about 1.3 miles NE of Isla Pajalo.

Isla Tangbac lies about 3 miles SW of Isla Pajalo. Puerto Americano (45°02'S., 73°42'W.), a small inlet formed between Isla Tangbac and Isla Dar close off its SW side, affords shelter to small vessels. The S entrance is narrow and obstructed by a bar with a reported depth of 4.5m, but within, the depths in the wider part are from 8.8 to 18.3m. The N entrance is obstructed by a spit. A group of above-water rocks lies in the approach to the S entrance, about 1 mile SSE of the entrance. Three above-water rocks lie up to 0.2 mile offshore N of the above group of rocks.

Anchorage for small vessels can be taken, in 18.3 to 20.1m, about 0.3 mile E of the SE end of Isla Dar. The shore bank E of the anchorage has been reported as extending. Vessels with local knowledge anchor off the E side of Isla Tangbac, about 1

mile N of the S end of that island, where the depth is about 12.8m.

Isla Melchor (45°08'S., 73°53'W.), large and irregular, lies close SW of Isla Tangbac. A dangerous rock, awash, lies close E of a group of above-water rocks that lie in a bight about 2.5 miles N of the SE point of the island. Small vessels with local knowledge can anchor, in 10m, in a small cove about 6.5 miles N of the same point.

Puerto Lagunas (45°17'S., 73°42'W.) is entered between the SE point of Isla Melchor and the dangers N of Isla Castillo, 1.5 miles to the SW. Isolita Santa Maria, with numerous above-water and below-water rocks off its E side, lies in the SE approach to the anchorage, about 1 mile SE of Isla Castillo. Foul ground, fringed with kelp and an above-water rock marked by a beacon at the outer end, extends up to 0.3 mile N from the N point of Isla Castillo. Bajo Otranto, a detached 4.5m shoal, lies 0.6 mile NE of the same point and on the S side of the entrance fairway. A rock, marked by a beacon, lies close off the N shore of the anchorage, and about 1.5 miles W of the SE point of Isla Melchor. A detached shoal, marked by kelp and with a least depth of 1.8m, lies about 0.3 mile SW of the rock.

A radio tower is situated on the E entrance point of a small lagoon, about 0.8 mile W of the SE point of Isla Melchor.

Anchorage can be taken, in 20.1 to 29m, about 0.3 mile S of the lagoon entrance. Small vessels can anchor, in 12.8 to 14.6m, in Caleta Sepulco at the NW part of Puerto Lagunas.

Isla Victoria and Isla Quemada, two large islands, lie S of Isla Melchor. The islands are separated by unexamined passages. Grupo Barba comprises numerous islets and above and below-water rocks that lie on a foul area that extends up to 3 miles E from the E coasts of the two islands, and extends about 4 miles S from Isla Castillo to Isla Mitahues. Isla Pescetto, the largest of a group of small islets that lies on the outer edge of this foul ground, lies about 2 miles NNE of the NE end of Isla Mitahues. A detached 12.9m patch lies in the middle of Canal de Moraleda, about 1.8 miles E of Isla Pescetto.

Isla Mitahues (45°24'S., 73°44'W.), on the SE part of which a light is shown, lies on the NW side of the junction of Canal de Moraleda and Canal Darwin, and about 0.5 mile E of Isla Quemada. It marks the S end of the W side of Canal de Moraleda.

Emergency anchorage can be taken, in 24 to 26m, between Isla Mitahues and Isla Quemada, but vessels must avoid a 3.6m patch that lies about 1.5 miles W of the S extremity of Isla Mitahues.

Mainland Canals and Fjords East of Canal de Moraleda—Punta Guala to Canal Costa

7.76 Punta Guala (43°44'S., 73°03'W.) is rock-fringed and salient, and has a sharp summit. A disused light structure, consisting of a stone tower, stands on the point.

From Punta Guala, the S side of Peninsula Coca trends about 3.5 miles ESE to Punta Piti, the N entrance point of Estero Piti-Palena. Grupo Las Hermanas, a group of rocks and islets, lies on the S side of the approach, about 1.7 miles S of Punta Guala. A number of rocks also lies about 0.3 mile S of the E island of the group.

Isla los Leones (43°47'S., 72°57'W.) lies on the S and W sides of the narrows leading into Estero Piti-Palena. The Rio Buta-Palena flows into the sea between the W side of Isla los Leones and Punta Palena, 0.3 mile W of the W side of Isla los Leones. The river entrance is fronted by a drying bar. A light is shown from a small islet located off the NE extremity of Isla los Leones.

The entrance channel to Estero Piti-Palena is narrow and winding. Within the inlet there are a number of above-water rocks on either side. A narrow arm recedes about 6 miles N from the NE end of the inlet and is reported as deep. A shallow river flows into the SE end of the inlet.

Canal Refugio (43°58'S., 73°08'W.), a passage between Isla Refugio and the mainland, is foul in its S part. The N part is deep, but the coves on the mainland offer little protection. Puerto Santo Domingo, a cove on the mainland side near the middle part of the canal, offers anchorage to vessels with local knowledge. A rock, awash, lies about 0.5 mile N of some islets that lie within the N entrance and on the W side of the passage.

Canal Jacaf is entered between the S island of Grupo Gala and Isla Vico, 2.8 miles to the SW. The canal is about 30 miles in length and joins Canal Puyuguapi off the NE end of Isla Magdalena. The canal is clear of dangers in the fairway, except for some islets in Paso Sibbald, where the fairway SE of Islote Oreste is restricted to a width of 0.2 mile. There is a patch, with 7.3m over it, lying about 0.3 mile W of Islote Oreste. There are a number of islands, islets, and rocks outside the fairway that can best be seen on the appropriate chart.

The tidal currents in Canal Jacaf run NW on the rising tide and SE on the falling tide, following the general direction of the channel.

Canal Puyuguapi (44°55'S., 73°21'W.) separates the SE side of Isla Magdalena from the mainland. It has a least width of about 1 mile and is clear of dangers in the middle part throughout its length, although islets and rocks lie up to 0.5 mile offshore in places. The canal is 38 miles in length from its entrance to the junction with Canal Jacaf. The depths in mid-channel are deep throughout the length of the canal.

Isla San Andres, from which a light is shown, lies in the entrance to the canal. The approach channel leads SE between this island and Isla Magdalena. A light is shown from the N shore of the canal in a position about 17 miles NE of Isla San Andres.

7.77 Puerto Cisnes (44°44'S., 72°42'W.) is a small deep cove on the E side of Canal Puyuguapi, 30 miles above its entrance. Local assistance is required to anchor in the S part of the cove E of the delta of the Rio Cisnes, which flows into the S side of the cove. The delta extends about 0.5 mile N from Punta Buist. The bank was reported to have extended NE. The cove recedes about 1 mile E between Punta Buist and the N entrance point on which a light is shown, about 1.7 miles NNE. The light is exhibited from a green tower, 4m high. Punta Bennett can be identified by a waterfall. The E shore of the bay is backed by a gravel beach which changes to cliffs along the S part. A beacon stands on the beach about 0.4 mile SE of Punta Bennett. Anchorage can be taken, in 20.1m, about 0.3 mile offshore in a cove just SW of the delta. An emergency light is shown when using this anchorage.

A wharf, 25m long E and W, stands close E of Punta Bennett. Ships up to 70m long and having a draft of 4.6m can berth alongside in good weather on a W heading. The port anchor should be used with six shots out, in a depth of 40.2m.

Seno Ventisquero (44°28'S., 72°38'W.), the NE extension of Canal Puyuguapi, extends about 12 miles NE from the junction of Canal Jacaf and Canal Puyuguapi. Toward the middle part of the inlet the channel is restricted at Paso Galvarino to a width of 79m and a depth of 26m. The E side of the inlet is fringed by a shore bank, the outer edge is marked by two beacons. A light is shown on the W shore of the inlet. The inlet is used mainly by small craft.

Puerto Puyuguapi, at the head of Seno Ventisquero, affords anchorage for small vessels, in 46m, about 183m off the beach and S of a sawmill and prominent house. An L-shaped pier, 31m long, stands on the N side of the inlet, with a least depth of 5.2m alongside. Vessels approach the dock steering 350 and drop the anchor broadside at about 75m off the dock, in a depth of 16m.

7.78 Canal Ferronave (45°08'S., 73°29'W.) leads S through the islands that encumber the E side of Canal Moraleda in its S part. The canal has a least width of 0.2 mile and a least charted depth of 12m in the fairway. Lights are shown from some of the islets adjacent to the fairway.

The fairway of the canal trends SSE between Isla Tuap and Grupo Tisne to a position about 0.5 mile E of Isote Eugenia (44°58'S., 73°28'W.), on which a light is shown. Then it trends SSW between Isla Oreste on the E side and Isla Viola and Isla Latolque on the W side. Foul ground extends 0.5 mile E from the E side of Isla Latolque. A rock, awash, lies about 0.5 mile S of Isote Eugenia Light.

The canal continues S to Isote Precaucion, which shows a light, then SSW to Isote La Boina, which also shows a light. The N and central part of the canal is fairly free of dangers. The dangers in the S end of the canal can best be seen on the chart. Canal Ferronave joins Canal Pilcomayo SE of Isla Zola (45°14'S., 73°32'W.).

Caution.—When navigating Canal Ferronave, the bearings of the lights must be closely watched due to the set of the current which here runs strongly. The utmost care is necessary.

7.79 Puerto Aguirre (45°10'S., 73°32'W.) is formed between Isla Eugenio and Isla Las Huichas. Small vessels can approach from the S and take anchorage, in 29 to 35m, about 0.2 mile E of the S extremity of Isla Las Huichas. The port has two small piers that are used by small craft. A third L-shaped pier, 33m long, can accommodate vessels with a draft of 4.6m alongside.

Canal Pilcomayo is entered from Canal de Moraleda at a position about 0.5 mile SW of Isote Direccion (45°11'S., 73°37'W.). The fairway trends SE and leads SW of Isla Swett, Isla Viel, Roca Blanca, and Isla Pilcomayo; then between Isla Pilcomayo and Isla Costa; and then along the N side of Isla Chaculay. Numerous islets lie on the S side of the approach between Isla El Blanco and Isla Costa.

The fairway continues SSE between the E side of Isla Chaculay and Isla Carvallo, and then E into Seno Aisen (Fiordo Aysen) between Isla Elena and the mainland to the N.

Canal Pilcomayo has been only partially examined, but there is a least charted depth of 10.9m at the inner end of the channel between the N side of Isla Elena and the mainland. The narrowest parts of the channel are between Isla Costa and Isla Pilcomayo, and between the E end of Isla Elena and the mainland to the N where the channel is restricted to a width of about 0.3 mile.

The principal dangers are the foul ground that extends N from Isla El Blanco; above and below-water rocks that lie up to 0.2 mile W of the W extremity of Isla Pilcomayo; and rocks, submerged and awash, that lie 0.2 mile E and W of the S extremity of Isla Carvallo. A light is shown on the SW side of Isla Carvallo; another light is shown on the N side of the E end of Isla Elena. The tidal current attains a rate of up to 3 knots in this channel.

Large vessels can take anchorage, in 10.9 to 28m, off the entrance to Caleta Vidal, about 1 mile E of Isla Carvallo. An old landing pier and a white triangular daymark are situated near the NW entrance point of the cove.

7.80 Canal Rodriguez (45°19'S., 73°33'W.), entered from Canal de Moraleda, trends E and NE between Isla Chaculay and Isla Churrecue, and joins Canal Pilcomayo to the E of the former island. This channel is recommended only for small vessels.

Punta Rudolphy (45°18'S., 73°36'W.) is the W extremity of a peninsula that projects from the SW end of Isla Chaculay. Isote Sur, with a rock close off its N side, lies in the middle of the entrance about 1.3 miles SE of the point.

Paso del Medio leads between the mainland and Isla Churrecue and Isla Elena. The fairway is deep, but has not been completely examined and several islands and dangers lie in the channel. This channel is the one recommended for large vessels proceeding into Seno Aisen (Fiordo Aysen), because it is the widest of the approach channels to that inlet.

Isla Gutierrez (45°22'S., 73°36'W.) lies on the NW side of Paso del Medio. Vessels should not pass N of this island because of foul ground in the passage. Isote Gonzalez lies about 0.5 mile NNW of Isla Gutierrez, and a dangerous underwater rock lies about 0.5 mile farther to the W.

Isla Casma lies on the S side of Paso del Medio. A detached submerged rock, with 1.8m over it, lies about 0.8 mile N of the W extremity of the island. Isote Rodriguez, with several above and below-water rocks, lies up to 0.7 mile S of the SE point of Isla Churrecue.

Isla Colorado (45°21'S., 73°21'W.) lies near the middle of the channel about 3 miles E of the SW point of Isla Elena and can be passed on either side.

Seno Aisen (Fiordo Aysen)

7.81 The inlet is deep, irregular, and clear of known dangers in the fairway, but not completely examined. It is from 1.5 to 3.5 miles wide. The Rio Aysen, 6 miles within the mouth of which Puerto Aysen is situated, is accessible only to small vessels of limited draft.

Los Cincos Hermanos (45°16'S., 73°16'W.), a group of islands and rocks, lies on the N side of the fairway about 4 miles within the entrance. Puerto Perez, an anchorage with 22 to 40m, is between the group and the shore to the N. This an-

chorage is not recommended because vessels must anchor too close to the shore and the shorebank is steep-to.

Punta Angosta is the NE end of a T-shaped peninsula that projects from the S shore and lies about 2 miles SSE of Los Cincos Hermanos. Islote Petizo lies close off the W end of the peninsula, and Islote Bonito lies 0.5 mile off the NW side of the peninsula.

Isla Carmen and Isla Partida, separated by a deep passage, lie at the head of the inlet and in a NE direction. Two islets lie close off the NE end of Isla Carmen.

Bahia Chacabuco (45°28'S., 72°50'W.) lies on the S side of the head of Fiordo Aysen and is entered between Punta Weste and Punta Soffia, 0.8 mile to the NE. The bay affords good anchorage to all classes of vessels. The bay is well-sheltered, but is affected by sudden squalls which blow from a ravine on the SW side of the bay. A light is shown on the S side of the approach to the bay, about 1.8 miles WSW of Punta Weste, and a lighted buoy is moored on the E side of the bay and marks the edge of a shoal.

A vessel reported that the only aid to navigation for approaching the bay was a single light. Anchorage was reported to be sparse, as the bay is deep, with the exception of a shelf extending 0.2 mile from shore near the bay's SW side.

7.82 Puerto Chacabuco (45°28'S., 72°50'W.) ([World Port Index No. 14197](#)) lies on the E side of the bay. The bay offers excellent anchorage with depths up to 45m. Accommodations consist of an old pier, a new pier, a ro-ro berth, and an offshore tanker terminal. Principal cargoes handled at this port are zinc concentrates, wool, and petroleum products.

Depths—Limitations.—Muelle No. 1 is 71m long, with a maximum depth alongside of 10m.

Muelle No. 2, located close NW of Muelle No. 1, has three berthing faces, with limiting dimensions, as follows:

Berth	Berth length	Max. draft (aft)
No. 2	42m	8.0m
No. 3	52m	9.75m
No. 4	37m	8.0m

It has been reported that at Berth No. 3 it is possible to berth a vessel with a maximum length of 165m, with a draft of 7.6m forward and a draft of 9.7m aft.

An offshore tanker terminal, situated 600m to the N of the cargo piers, is used by coastal tankers for the discharge of diesel, gasoline, and kerosene via a submarine pipeline. The maximum loa allowed is 91.4m.

Ships should moor heading S with two anchors down and the stern secured with a line to shore from each quarter. The end of the pipeline is marked by a buoy which lies near the approach transit of 096°. The berth is affected by squalls from the SSW. A stranded wreck lies close offshore NW of the pipeline.

A discharge line is available S of the offshore tanker berth for vessels up to 750 grt.

North of the new pier is a ro-ro berth with four concrete ramps; the maximum draft allowed is 2.5m. A ferry service to Puerto Quellon operates on a regular basis.

The COPEC Terminal accommodates tankers up to 10,000 dwt, with a maximum length of 110m and a maximum draft of 10m.

The Esso-Shell Terminal accommodates tankers up to 40,000 dwt, with a maximum length of 165m and a maximum draft of 25m.

Pilotage.—Pilotage is compulsory; the port may be contacted by VHF channel 16.

Anchorage.—Good anchorage can be obtained SE of the bay, in depths ranging from 40 to 50m.

The Rio Aysen (Rio Aisen) flows into the head of Seno Aisen between low, swampy islands. The shoals which front the river entrance are reported to be advancing, but fluctuate with the seasonal outflow of the river. The channel across the shoals, for which pilotage is advised, proceeds through depths of less than 3m, and is unmarked. Tidal currents with rates of 3.5 knots are reported to exist here. It is reported that the river has silted and navigation for small craft with drafts up to 2.5m is only practicable as far as 4 miles within the entrance.

Channels and Fjords South of Seno Aisen

7.83 The network of inner channels and fjords S of Canal de Moraleda and Seno Aisen have no commercial importance. Canal Errazuriz, a S extension of Canal de Moraleda, offers a navigable route to the sea via Canal Chacabuco, Canal Pulluche, and Boca Wickham. Some of the inner fjords have hardly been explored and the surveys are only of a reconnaissance nature. Pilotage is compulsory for foreign vessels proceeding into these waters. Although many of the channels are deep and navigable, dangers are known to exist and other unknown dangers may exist.

Canal Errazuriz trends about 17 miles SSW from the junction of Canal de Moraleda and Canal Darwin to Canal Chacabuco. It leads generally between Isla Traiguén on the E side and Isla Luz and Isla Humos on the W side. Several smaller islands and dangers lie on both sides of the channel. Although the channel has been only partially examined, the fairway has a least width of about 0.5 mile and a least charted depth of 31.5m.

Islotes Quetros (45°28'S., 73°46'W.), a group of islets and rocks, lie close off the NE point of Isla Luz on the W side of the fairway at the N entrance of the channel. Isla Ballico and several adjacent islets lie on the E side of the channel about 5 miles S of Islotes Quetros. Grupo Centro, three small islets, lie toward the middle of the channel, but on the E side of the fairway, about 1.3 miles W of the S end of Isla Ballico. A rock, awash and marked by kelp, lies about 0.5 mile SSE of the S of Grupo Centro.

A dangerous steep-to rock, awash and marked by kelp, lies on the E side of the channel a little less than 1 mile NW of the NW point of Isla Acuaao.

7.84 Isla Acuaao (45°38'S., 73°49'W.), with foul ground up to 0.5 mile off its SW side, lies on the E side of the channel close off the W side of Isla Traiguén, and about 3 miles SSW of Isla Ballico. Islote Ana and two small islets lie about 0.3 mile S of Isla Acuaao.

Islote Lillian lies on the W side of the channel, close off the E side of Isla Humos. Shoals have been reported between Islote

Lillian and Isla Humos, making this pass unnavigable. Islote Diego, on which a light is shown, lies close off the SE side of Islote Lillian. Two rocks, awash, lie close off the S end of Islote Lillian. Roca Gloria, awash at low water and marked by a lighted beacon, lies about 0.5 mile NE of Islote Diego.

Cayo Observatorio, awash, lies about 0.2 mile S of Punta Harchy (45°43'S., 73°53'W.). A number of rocks and shoal patches lie S and W of the cay and can best be seen on the chart. Anchorage can be taken in Bahia Harchy, about 1.3 miles W of Punta Harchy, in a depth of 20.1m. This anchorage is not recommended, as there are many dangers in the approach, and the bay is exposed to S and SW winds which blow with great force.

7.85 Estuario Barros Arana (45°52'S., 73°55'W.) has a long irregular channel that is entered from Canal Chacabuco through Canal Renjifo. The channel is only partly explored and known only to local lumbermen who report it as deep. South of Isla Fitz Roy (45°50'S., 74°00'W.) the channel opens with several islands with rocks close off their shores on the W side of Estuario Barros Arana.

Paso Tres Cruces is the E part of Canal Chacabuco, which trends SE from its junction with Canal Errazuriz and joins Canal Elefantes E of Isla Simpson. In Paso Tres Cruces, the tidal current attains rates of from 4 to 5 knots. There are tide rips on the SW side of the passage.

There are depths of 8.5m, 1.8 miles WNW and 0.5 mile W of the W end of Isla Paty; the latter position is on the recommended track. There are depths of 13.1m on the recommended track, 0.6 mile W and 0.9 mile NW of Islote Norte (45°46'S., 73°46'W.).

Anchorage can be taken, in 18.3 to 37m, in the outer part of Bahia San Ramon. This bay is entered from the SW between Isla Paty and Isla Rojas. Small vessels can anchor in Puerto San Miguel, a small cove that indents the SE end of Isla Rojas, but there are several dangers near this anchorage.

Paso Casma (45°25'S., 73°37'W.) is about 1 mile wide and deep in its middle part. It joins the S end of Canal de Moraleta with Canal Costa and trends SE between Isla Lavin (45°25'S., 73°36'W.) and Isla Renaico, about 1 mile SW of Isla Lavin. Bajo Casma, with less than 1.8m over it and marked by kelp, lies about 0.7 mile ESE of Isla Lavin.

Canal Costa is about 20 miles long with a least width of about 1.5 miles. It is clear of known dangers except at its S entrance. The least charted depth in the fairway is 42m. The channel separates Isla Traiguen from the mainland E. Isla Raimapu lies at the S entrance of the channel.

7.86 Estero Quetralco (45°43'S., 73°25'W.), an unexamined inlet, recedes about 18 miles to the NE between Punta Lynch (45°47'S., 73°34'W.) and a point about 3 miles SE. Several islands lie at the head of the inlet where it divides into two arms. A wooden pier and a flagstaff are situated at a small village which stands on the E shore of the inlet, at the mouth of a river, about 4.8 miles ENE of Punta Lynch.

Estuario Elefantes trends about 47 miles S from the S end of Canal Costa to Golfo Elefantes, the head of the inlet. The entrance to the gulf is through Paso Quesahuen, a narrow passage about 0.3 mile wide between the islets that restrict the entrance. From the entrance to Estuario Elefantes to Paso

Quesahuen, the fairway is deep and clear of known dangers in mid-channel, except for Islotes los Mogotes and Bajo Porvenir.

Islotes los Mogotes (45°57'S., 73°39'W.) comprise a number of islets and rocks on the W side of the N part of Estuario Elefantes. Shoals, with depths of 4m and 12.7m, lie 3 and 4.5 miles SSW, respectively, of Punta Garrao (46°20'S., 73°40'W.). This point is the N entrance point of Estuario Francisco, a deep narrow fjord that leads 24 miles NNE of its entrance. A 3.9m patch lies 3 miles SW of Punta Garrao and it is close E of the recommended route.

Paso Quesahuen (46°24'S., 73°46'W.), with a least fairway depth of 9.1m, trends SW between Isla Leanor on the W side of the passage and Islote Pelado, about 0.5 mile SSW of the E end of Isla Leanor. The tidal currents in the passage attain rates of 5 to 7 knots at springs. The passage should only be used by small vessels with local knowledge.

Golfo Elefantes is entered from Paso Quesahuen, its N extremity. The gulf is deep and clear of dangers. Caleta Gualas, a cove on the E side of the gulf, is restricted by unmarked shoals that extend into its entrance from both entrance points. A river flows into the head of the cove. The cove has a muddy bottom, but cannot be recommended as an anchorage.

Small vessels can take anchorage in a number of places in Estuario Elefantes. Temporary anchorage can be taken, in 26m, about 0.3 mile S of Isla Raimapu. A vessel can anchor in a small bay just S of Islotes los Mogotes, in 14.6m. Anchorage can be taken in the NW part of Bahia Exploradores, about 0.5 mile offshore. This bay is entered on the E side of Estuario Francisco, about 6 miles ENE of Punta Garreo. Vessels also take anchorage in Puerto Grosse, at the head of Estuario Francisco, in 23.8m, but may be obstructed by floating logs from the local sawmills. Anchorage can also be taken in Fond Pinto, on the SW side of Golfo Elefantes, in 59m, close offshore.

Anchorage, with good shelter, can be taken, in 29.3m, in an inlet entered on the E side of Estuario Elefantes, about 7.8 miles S of Isla Raimapu. A police station with a radio is reported to lie within the inlet.

7.87 Bahia San Rafael (43°33'S., 73°48'W.), most of which dries, is the inner part of Golfo Elefantes and is separated from it by a peninsula that extends SE from the W shore. The Rio Tampanos, from 0.1 to 0.2 mile wide and with a depth of 8.2 to 14.6m, flows into the SW end of the bay and connects it with Laguna San Rafael about 5 miles to the S. Small vessels, with drafts up to 4m, can navigate the river with the aid of local pilots from Aysen or Puerto Aguirre. Icebergs from the glacier on the E side of the lagoon are carried down the river by the strong tidal currents. They can best be avoided by entering the channel on the flood tide.

The intricate channel through Bahia San Rafael is entered between Islote Entrada and Islote Direccion, which lies 0.1 mile and 0.5 mile S, respectively, of Punta Leopardos, the outer end of the peninsula. The channel then trends NW and SW between the shore banks to the river mouth. The fairway passes N of Isolote Observacion, about 0.5 mile WNW of Punta Leopardos, and then turns to the SW.

The best anchorage in Bahia San Rafael is W and about midway between Islote Entrada and Islote Direccion. Anchorage can be taken, in 5.5 to 11m, hard mud. A vessel should an-

chor as close to shore as depths permit in order to avoid the full strength of the tidal current and the track of the drifting ice.

The channel through the Rio Tempanos into Lagoon San Rafael should not be attempted without local knowledge.